

THE WORLD'S GREATEST PC MAGAZINE

PCFormat

TROUBLESHOOT

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Dream Machines

The world's fastest supercomputers and our ultimate home PC revealed

EXCLUSIVE

ALARM BELLS RING FOR ATI?

NVIDIA's 3D cards are faster, but we reveal the Radeon X1900

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PLUS LATEST ON
Hellgate: London
D&D Online
Rainbow Six
Paraworld
& more...



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Games designers on how to get your mod team hired

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HOW TO » MAKE A WEB BROWSER » COOL YOUR PC FOR FREE » DESIGN A BETTER GARDEN

PCFormat

THE WORLD'S GREATEST PC MAGAZINE

in your mag

#183 January 2006

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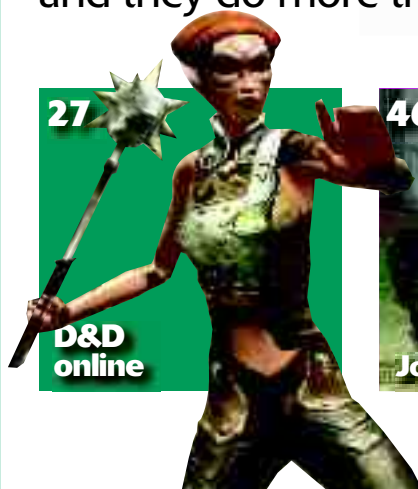
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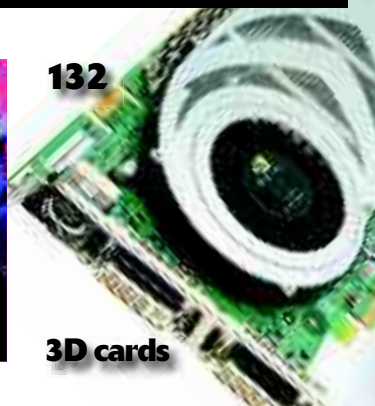
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 >> Seltco Flash Designer
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 Lite >> Steganos Security
 Suite >> Tell Me More SE*



On this month's DVD...

FPS Creator

Think you could improve on *Half-Life*? Make your own shooter on **page 112**

Boost your CV

Prospective employers will fall at your feet thanks to *Resume Builder*. **Page 120**

World of work

Every program you'll ever need in our Workshops section of this disc.

Modders unite

Find out which homebrew titles have made it into our Top 10. **See page 46**



3D world

Redesign your garden in stunning 3D from digital photos. **See page 106**

Quake IV

Batter the vile Strogg hordes in this visceral, bloody blast.

Civilization 4

Design a race and then run it your way with our playable demo.

Distro fever

Ubuntu is on this disc, and our six way penguin-filled software round-up starts on **page 84**

Art attack

Turn your wonky holiday snaps into beautiful images in a few clicks. **Page 116**

STILL BUYING CDS?

You get **15 times** more stuff on our **9.4GB DVD!**

PLAY THIS

A Quake IV

Guns, guns, guns and Stroggs aplenty.

W,S,A,D Movement
LMB Shoot
RMB Zoom
F Flashlight
R Reload

B Civilisation IV*

Rule the world, enslave the weak and laugh maniacally.

Arrow Keys Move Camera
LMB Select
RMB Action
CTRL Rotate Camera
C Centre Camera

C Need For Speed: Most Wanted

Remember kids, speed's fun til you're wrapped around a lamppost.

Arrow Keys Acceleration & Steering
Space Handbrake
ALT Turbo
R.CTRL Speedbrake

D Harry Potter and the Goblet of Fire

The golden pre-teen returns in his latest arcade wand-em-up.

Cursor keys Movement
S Super Strength Magic
X Offensive Magic
C Kinetic Magic

Virtual Skipper 4*

Ah, the sound of whistling wind and queasy land-lubbers.

L/R Arrows Steer Tiller
Down Arrow Centre Tiller
RMB Move Camera
MSWheel Zoom In/Out

Loads more games content

GAME DEMOS

» Civilization IV » Harry Potter and the Goblet of Fire » Need for Speed: Most Wanted » World Racing 2 » Quake IV » RealArcade: Super Pop & Drop » 80 Days » Serious Sam 2 » The Three Musketeers » Virtual Skipper 4 » Zoo Tycoon 2: Endangered Species » Bloodrayne (in the root directory of the DVD)

MAPS/MODS

» BF1942: Battlefield Pirates » BF1942: Desert Combat » HL2: Dystopia » HL2: Garry's Mod » HL: Natural Selection » HL: The Ship » HW2: Star Wars Warlords » OF: Finnish Defense Force

PATCHES

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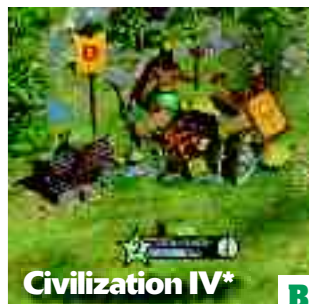
» 50 Shareware games

For a full list of everything on the disc please refer to the disc's interface and packaging. Controls for the games are listed there too.



Quake IV

Take on the Strogg thanks to PCF



Civilization IV*



NFS: Most Wanted



Harry Potter



Super Pop & Drop*

Addictive puzzle action as sold for £14.99!



On your disc you'll find the best apps, demos and tutorials

The best full programs

Our discs deliver top-quality, high-value apps and utilities. Let us know if there's something you want and we'll do our best to get it for you.

Play the latest games

Don't wait hours to download this month's best games demos. They're all here, right now.

Who needs manuals?

We want you to get the most from your free programs. PCFormat features more software guides than any other PC magazine in the world.

Technical support

We like to think our discs are always problem free, but if you do have any issues, contact the disc support team on 01225 822 743 or via email at: support@futurenet.co.uk.



PCFormat

Welcome

And so we emerge almost unscathed from the biggest buying time of the year, and start 2006 with our brains refreshed, and (hopefully) our PCs refitted at the expense of a wealthy relative. Even if you didn't manage to get someone to invest in a GeForce 7800GTX 512 on your behalf, you never know what the January sales will bring – keep an eye out, you might just grab a bargain or two.

The only drawback to this seasonal lull in prices is the

inevitable problems any PC upgrade brings. Downloading drivers, remembering to save restore points and dealing with customer services at their busiest time of the year.

Fortunately, Mike Abolins is on hand to help with any New Year teething problems you're experiencing in our massive troubleshooting feature on page 38.

For most of us, though, money is tight in January. Which is why we've dedicated this issue to those who want

to sit back and dream on the cheap. Our sleeping moments are filled with lustful thoughts about monolithic supercomputers at work and ludicrously fast gaming PCs for our homes. Wonder how Freud would interpret that...

Enjoy the issue.

Adam Oxford, Editor



Alec Meer, Deputy Editor

Was on holiday for most of this month, so none of the high points to be found within this tome can be attributed to him. Just so's you know. That said, were he a megalomaniac, he'd claim any failing in the issue, real or imagined, can be directly attributed to his absence, and the team's inability to cope without his rock-like presence reading WoW fansites and overusing the coffee machine day in, day out.

Achievement of the month Failing his driving test within the first five minutes. Hooray!



Al Bickham, Technical Editor

'Bonobo' Bickham spent most of his Christmas break hunched over the grint-addled hard drives of relatives' PCs. Ever tried running Adaware on a creaky P2 400 machine that's wriggling with Spyware? Al's advice: don't. Don gloves, remove the hard drive, burn it in a blast furnace, bury the ashes, then salt the earth so that nothing grows there ever again.

Achievement of the month Our very own Shackleton shrugged off -4°C temperatures on a winter camping foray.



James Carey, Games Editor

This month our kid Carey ruined his entire holiday season of cinema viewing by playing about a billion games-of-the-film before the films-what-the-games-is-based-on were on general release themselves. The one

exception to this was *Doom*, a film-of-a-game which he'd played before, but not seen. Honestly, there's nothing but repeats on at Christmas...

Achievement of the month

Chasing up a scattered group of modders turned game devs for page 46's feature.



Jeremy Laird, Technology Writer

This month nearly didn't happen for PCF's self-styled Supreme Being, Fearless Leader and Master of the Universe. How so? Hilariously short deadlines and painful PSU problems meant the ATI CrossFire vs NVIDIA SLI dual-graphics showdown nearly became a MissFire. Still, those vital benchmarks were made

and the results can be seen on page 62. Jeremy also found time to have a tinker with Rock's new gaming laptop (p73), which took a refreshingly short amount of time to set up after all that dual-card nonsense.

Achievement of the month Got ripped off on Ebay for the first time. Probably.





FSP's latest ATX 12V

version 2.01 Power Supply

Blue Storm series

With high efficiency

less noise & lower power consumption

Blue Storm series

High Efficiency over 70% up to 80%

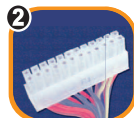
350W / 400W / 500W



ATX 12V v2.01 supports the latest Intel and AMD processors



2 x S-ATA connectors



With 24 pin to 20 pin connector compatible with v1.3 MB



Mesh sleeving on all output cables



12cm fan provides near silent operation



Low power consumption on standby (<1W) incorporating PFC

Retailers



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www.lowestonweb.com



MicroDirect
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PCFormat

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AROUND THE WORLD WITH PCFORMAT

PCFormat's outrageous popularity isn't confined to the UK - the magazine is licensed to the following countries in Europe, Africa and Asia.



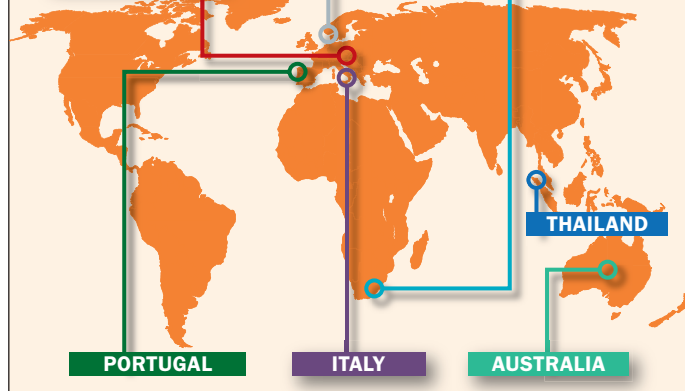
SLOVENIA



DENMARK



SOUTH AFRICA



Frontend

THE BEST OF THE MONTH IN COMPUTING

Rootkit: a true story

How not to fight piracy – the complete tale of Sony's security and marketing disaster...

Let's play a game: think Fantasy Football, but instead of managing Arsenal you're in charge of one of the world's biggest record companies and trying to fight piracy. Do you (a) make music cheaper, (b) scour the planet for exciting new talent that'll sell in truckloads, or (c) infect 500,000 legitimate customers' PCs with malware that provides an open door for hackers, results in endless lawsuits and costs you millions to sort out? If you chose (c), congratulations: you're the boss of Sony BMG!

MALWARE ALERT

We've seen some stupid things in our time – the antics of certain staffers at the PCF Christmas party spring to mind – but Sony BMG's copy protection disaster managed to break our stupidometer. In late October it became apparent that the firm had shipped more than four million copy protected CDs, each of which contained a rootkit – a complex form of 'Trojan horse' malware.

The rootkit was part of the XCP copy protection

system, which was designed by tech firm First4Internet to prevent piracy. However, while the rootkit itself wasn't malicious, it hid itself in a dark corner of your hard disk, undetectable by most software. Once installed, malware writers could easily take advantage of it to sneak their own software onto your PC without your knowledge or permission.

As the news broke, Sony BMG managed to make a bad situation even worse. Speaking to US public radio, the firm's boss scoffed: "Most people, I think, don't even know what a rootkit is, so why should they care about it?" As he babbled, security firms reported the first Sony-specific malware, which used the rootkit to sneak onto PCs.

The rootkit was no longer a potential security risk: it was an outright security disaster. After what seemed like an age, Sony

BMG eventually released a tool that would reveal (but not remove) the rootkit, but incredibly, the tool made the security problems even worse. The removal tool, an ActiveX control, remained on your system and made it possible for websites to

"Once installed, malware writers could take advantage of the rootkit and sneak their own software onto your PC"

Eye Candy Dual-core power

Gateway 710b

Behind this tower's sheen lurk two 2.8GHz Pentium D cores; though its integrated graphics means it won't be shattering any *Quake IV* benchmark records, £499 without a monitor, or £649 with a 17" Acer screen (see right). uk.gateway.com

UNDER THE HOOD

CPU Intel Pentium D 820 (2 x 2.8GHz)

RAM 1,024MB

Video Integrated Intel Graphics Media Accelerator, 224MB (shared with system) Optical drive 8x DVD +/-R, with dual layer support

Hard drive 320GB

Software Windows XP Home Edition, Microsoft Works 8.0

QWERTY to the rescue

When it comes to PC troubleshooting, the venerable keyboard is the only tool you really need to get yourself out of trouble. So, bring in 2006 with our mammoth guide to ending your system nightmares on p38.

Liquid crystal loveliness

Spend a little more on the Gateway 710B and it'll ship with a snazzy 15, 17 or 19" Acer flat panel monitor, with a colour scheme that complements the PC itself.

Ultra-spyware

Sony's rootkit software is also reporting any PC it turns up on back to the mothership. This shot, created by Mark Kaminsky (www.doxpara.com/?q=sony), shows the location of PCs the rookit is tattling on. "It doesn't take much to make this a multi-million host, worm-scale Incident," says Kaminsky.



Free the music

These subtle stereo speakers supplied with the Gateway don't need to have a PC attached to them to play back your vast MP3 archive. Check out p75 for our review of the Squeezebox 3, which we'll cheerfully call the best wireless music streamer we've yet seen.

Breathe easily

A pre-built PC like this will be spick and span inside, but chances are your custom-built supermegaininja rig isn't. Check out page 110 for our guide to managing the airflow inside your case, and thus keeping system temperatures at a minimum.

**top
stories**

p15

BULLY BOY
Labour MP in a
funk over games

p17

RIP-OFF.CO.UK
Online shoppers
feel the pinch

p19

32-BIT THE DUST
Microsoft gears
up for 64-bits





Alec Meer
BROWSING THE NIGHT AWAY

Keep Firefox from the dark side of the internet

So, Mozilla Firefox is reportedly now on about 10% of the world's web-enabled PCs. That's surely enough to qualify it as no longer being referred to as an 'alternative browser' – it's mainstream, baby. Which puts me in an interesting quandary. I want to see IE knocked off its perch as much as the next man, but I also don't want a situation where one browser monopolises the internet again. Should Firefox become number one, chances are high it'll fall prey to the same complacency as IE.

So, Firefox needs to claim a bit more market share, but not so much that it gets comfortable. As it is, its recently released version 1.5 (which you'll find on this month's disc) is streets ahead of almost anything currently seen in the beta of Internet Explorer 7, and I'd recommend everyone installs it. But I'd also recommend that everyone experiments with other recently updated browsers, such as Opera, rather than rely on Firefox – anything that helps encourage development of alternative technologies can only be good for us all in the long run.

■ install malicious code via Internet Explorer.

While security experts pored over the code, our favourite lawyers at Electronic Frontier Foundation (www.eff.org) looked at the licence agreement – all 3,000 words of it. It was amazed: the licence prohibited you from using the digital files at work or if you filed for bankruptcy, and you agreed to delete all the songs from your computer if you lost the original CD or left the country. You also agreed that you would install any and all software updates, and if those updates made your PC explode you'd be able to sue them for as much as five dollars (about £3).

MORE PROBLEMS

By early November, security firms added the rootkit to their known-nasties lists (although initially they revealed but didn't actually uninstall the offending application); message boards were packed with angry punters vowing to cancel their orders for PS3s and buy Xbox 360s; bloggers announced that they'd stop buying CDs and use Bittorrent; and lawyers began preparing lawsuits.

Finally Sony BMG caved in and offered to replace all 4.7m copies of the 52 offending CDs, a move that will cost millions. The firm also junked its ActiveX

control, released a new tool that safely removes the rootkit, and offered customers replacement MP3s of the affected titles.

So was it worth it? Did the system prevent so much piracy that Sony can chuckle at the cost of the

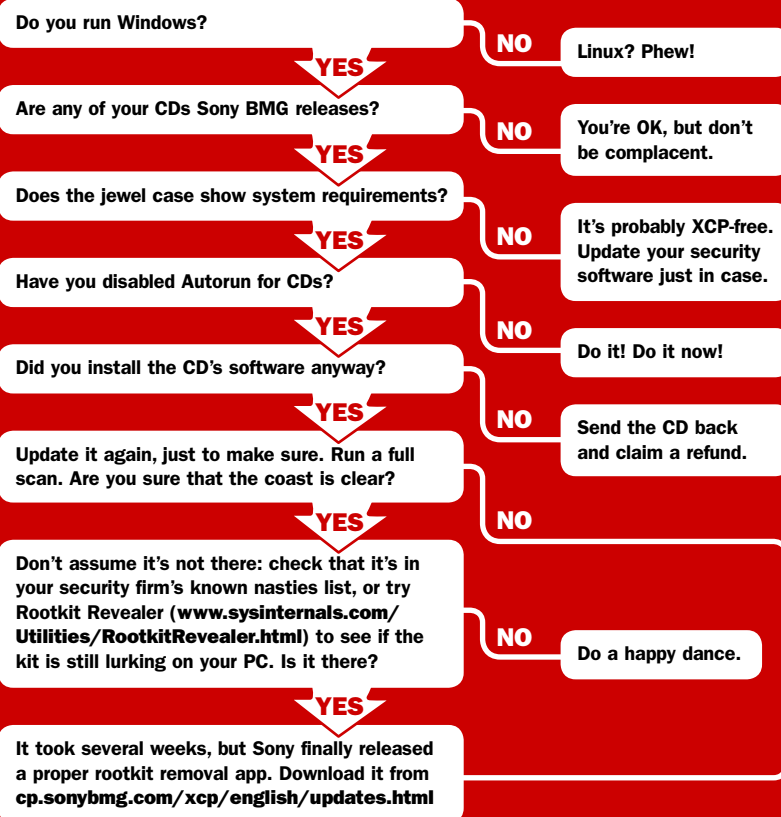
CD recall and laugh in the face of the lawsuits? It seems unlikely: many of the protected songs were, and are, widely available on P2P communities, as you can bypass XCP by sticking a small strip of Sellotape along the disc's outer edge.

This *Blue Peter*-esque fix hasn't been enough to slow the bad news for Sony. As well as being faced with a class action lawsuit from the EFF, it's also being sued by the Texas Attorney General for violating the state's anti-spyware laws, and at the time of going to press New York was looking at making similar charges.

The shame, is that the music playback app XPC discs force you to use reportedly contains code taken from the open source LAME player. If this is true, Sony's failure to declare such use breaks open source laws, and thus becomes copyright violation. Sony has already taken a few financial knocks of late – the damage from this could be untold. **PCF**

Root fear

Is the dreaded Sony rootkit lurking on your PC?



Amazon helpfully tells you if that Buggles album you've just bought contains copy protection.

THEY SAY

"We're very, very sorry for the disruption and inconvenience that this has caused to music consumers," Thomas Hesse, president of Sony BMG's Global Digital Business



TIME STARVED

Quick ways to entertain yourself

1 GOOGLE RISK

One thing Google really does get right is the openness with which it allows people to play with its apps. The latest Time Starved favourite comes courtesy of creative coders who've combined Google Maps with *Risk* for realtime global domination.

www.ashotoforangejuice.com/gmrisk.html

2 MAKE MONEY ONLINE

Tired of using search engines for free? Us too, that's why we approve of Pure Profile's scheme to pay you for searching for services like insurance.

www.pureprofile.co.uk

3 SPOT A SERIAL KILLER

Can you tell the difference between a geek pioneer and a serial killer? To find out, take the test at www.malevole.com/mv/misc/killerquiz and if you score less than 9/10, stay away from our offices.

4 TAKE A GAMBLE ON GAMES

Waracle is pioneering a system that allows gamers to play for 'a flutter' on its secure servers. We don't encourage gambling, but if you must do it, do it safely. www.waracle.com

5 BE A FORUM FRAPPR

Sign on at our forum and let everyone know where you live thanks to Frappr – the map pin map. Find readers near you now at www.frappr.com/pcff

Illustration A. Richard Allen



Vaz does Thompson

The UK's politicians have discovered a game they want to ban. *Bully* is thus assured immediate cult status...

Keith Vaz, MP for Leicester East, could be our very own Jack Thompson (tinyurl.com/8x75y). Say what you will about self-styled anti-gaming crusader Jack (but not anywhere your mother might hear that sort of language...) but it's clear the controversial US Attorney's inflammatory posturing has done wonders for his public profile (and his ego). Perhaps that's why our Keith is making a fuss over Rockstar's questionable new playground-violence title, *Bully*. Questioning Geoff Hoon in parliament recently

Vaz asked "If the BBFC does not make any changes [to *Bully*], will the government use their powers to ban this videogame?" With comments like that it's easy to see why some are tarring Keith Vaz with the same brush as Jack Thompson. Vaz has also prepared a bill on tighter restrictions for videogame ratings and regulation, calling for an end to the voluntary ELSA/PEGI system, replacing it with a statutory, government-run board. ELSA is understandably up in arms about the plans, saying they would "fragment" the

current status quo, forcing governments in Europe to draw up their own, potentially different guidelines and cause "a disaster for the games industry" there's no doubt that the current system is being stretched and is in need of some clarification. But unless the likes of Vaz are prepared to listen to the arguments of ELSA and actually have a debate about game classification rather than imitate the frustrating, pointless posturing we see from Jack in the states they'll be doomed to follow the US attorney's descent into ridicule and isolation.



Buyer beware

That humble USB key you picked up on eBay could contain a welter of evil apps

Another new threat for businesses has emerged from the net, says security consultant Orthus. A selection of USB drives are available online which come preloaded with all sorts of malware, and are apparently being sold for as little as a tanner. The nasty part is that these key drives will

download their covert payload as soon as they are connected to a machine, without informing the user.

The big worry is that one could wander up to any unprotected terminal, plug into the USB port and upload viruses without even touching the keyboard. Hackers are also putting software on these keys that

will steal passwords and even copy selected portions of target hard drives. This new plug-and-play approach has already increased the number of attacks on institutions from the inside, whether from disgruntled employees or sleeper agents it's impossible to tell.

STAT!

The number of bloggers arrested for "inciting harm to people and property over the internet" after the French riots last month. None have been charged at the time of writing.

WHO IS... Richard Hammond TV Presenter and Journalist.








Isn't he the little guy from Top Gear? Yes, but that isn't all he is. Not content with hurling perfectly good cars off cliffs in BBC2's flagship motoring program, he also manages to find time to front the Rome: Total War-based Time Commanders and BBC1's topical public awareness show, Should I Worry About..?

That's lovely, but what is he doing here in PCF?

He's not just a pretty face, and is using his profile to educate the millions of UK computer users. The government have joined forces with the National Hi-Tech Crime Unit and sponsors from the retail, finance and technology industries to promote online safety. The campaign is called Get Safe Online and our Mr Hammond is one of the ambassadors. "We wouldn't leave our front door open or our cars unlocked, but we regularly use the net without taking basic precautions." Visit www.getsafeonline.org for up-to-date information about online safety.

PCFtest PORTAL PAGES

Your life on a single page; login from any PC and see email, news feeds, and other info. All the giants are offering one – which is the daddy?

What is it?	Pros	Cons	Score
 <p>My Yahoo! http://my.yahoo.com It's been around for years, but now Yahoo's portal has a whole lot of competition, how does it stack up against the new blood?</p>	Just look at it, daily Garfield cartoons on your desktop! You can also change the look of your page by adding different colour themes.	It's a bit tricky moving the sections around and most of the time you won't be able to keep the desired amount on one screen without scrolling.	4/5
 <p>Windows Live www.live.com With Bill trying to claim ownership of the web, he's now got his own portal. It's currently in beta, with Office Live soon to follow.</p>	It's so easy to drag and drop content onto your screen; you can rearrange your page at will. The weather is prettier than Michael Fish too.	The clean lines are reasonably pleasant, but there's very little you can do to customise it visually. It's tricky to add some feeds too.	3/5
 <p>Start www.start.com Familiar? Microsoft is hedging its bets by having two portals. This one is just an 'incubation experiment' and lacks branding.</p>	Er, it doesn't say Windows in big letters at the top? Apart from that, it's as simple to use as Windows Live.	It's exactly the same as Live but lacks the e-mail options, still just as vanilla looking and somehow with less colour options.	2/5
 <p>Google Personal Home Page www.google.co.uk Google's effort is designed along the same lines as its Sidebar.</p>	Just as easy as the Microsoft pair to drag and drop content, but far easier to locate RSS news feeds and add them.	Looks almost identical to the Microsoft offerings and yet lacks their polished with so much unwieldy visual scaffolding in there.	3/5
 <p>My Ask Jeeves myaskjeeves.uk.ask.co.uk The dapper online butler is also having a stab at this home page lark, with this search-oriented beta portal.</p>	Dead easy to sort any web page into your edited categories, and you can download all the favourites from your browser too.	Much more labour intensive to get the same functionality as the other offerings, and there's no options to make it more easy on the eye.	2/5

CONCLUSION Though portals have been around for a while, they were perhaps ahead of their time. Now, people are comfortable with the internet as a constant presence on their desktop and need a way to keep tabs on information of interest to them. Yahoo! comes out on top in this respect, with colourful looks and diverse content. And Garfield.

Cyber café curfew

As drinkers in Britain get used to longer licensing, web cafés in the Malaysian city of Subang Jaya will be closed if they let gamers play past midnight. Cafés will have to

segregate gaming areas and apply for a licence and lock-ins will be raided.

Excessive online gaming is seen as a growing social problem in parts of Asia; China's government is concerned

after the parents of a WoW player who took his own life claimed it was game-related. Given the high suicide rate in China generally, this seems like a bit of scapegoating to us.



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A merry Christmas,
but a poverty-
stricken New Year?

Rip-off Britain goes online

Internet shoppers take a knee to the wallet as greedy manufacturers hike prices for the festive season

Here at PCF, we're fans of the box-shifters: e-tailers who offer excellent discounts on stock, as they simply don't have the land-cost and logistics overheads of a high-street chain. Pile 'em high, sell 'em cheap – works for us. You can pick up some incredible bargains and frankly, it's the *only* way to buy components.

But however small the online resellers' margins are (and they're often tiny), it's still largely the manufacturers' prices that dictate the cost. The Office of Fair Trading (OFT) has recently been looking into complaints from the Interactive Media in Retailing Group (www.imrg.org) that certain manufacturers raised prices for online retailers in the run-up to Christmas – so much so that some are finding it impossible to undercut high-street prices, therefore giving up their commercial advantage.

THE ANTI-SANTA

The IMRG is an organisation which was formed to promote good practice in online retail, and educate both retailers and consumers about the

benefits of shopping online. So naturally, when it came to their attention that certain manufacturers were raising prices, the flags went up. According to the IMRG, manufacturers have raised wholesale prices by anything up to 15% over sales to high street names. They haven't named other manufacturers yet, but increases are expected for online stores.

James Roper, CEO of the IMRG, explained that the UK was the only country to be affected by this dual pricing – proof positive that the UK is still one of the most expensive countries in the world. It's also a worrying indication that greedy manufacturers are capitalising

on that fact by charging us higher prices for items that sell for less in other countries.

Only one manufacturer, Sony, leapt straight on the defensive to deny the allegations. It stated that it offers a common price to all resellers. Steve Dowdle, Managing Director of Sony UK, says that "We supply retailers using a comprehensive set of commercial conditions that reward all dealers who add value to the brand proposition and purchasing experience." In a further twist to the tale, though, the IMRG issued a later statement recognising "the complexity of the arguments for and against such pricing practices". However, it is not backing down from a commitment that such schemes are "not unduly prejudicial to smaller online retailers".

"Certain manufacturers raised prices for Christmas"

HOT

Exbox 360

The men after our own destructive hearts at www.smashmyxbox360.com raised enough funds to buy one of Microsoft's new consoles on launch day, immediately throw it on the ground. Then hit it with a hammer. Then he hit it with a hammer some more. Then he hit it while angry punters watched

The war on spywareism

The US Federal Trade Commission is stepping up its efforts to quell the tide of unsolicited apps, and closed down three firms that bundled naughties with free programs. More of this, we say.

ADSL 2+

Peak speeds for the next-gen broadband are only available within the 500m of the exchange... The trouble is, there's already 500m of cabling inside the exchange. D'oh.

Rise and Fall

And the award for the most ironically-named game that never was of 2005 goes to Midway's epic swords and sandals RTS. Which has been axed, apparently just weeks from completion.

Xbox Dead

Even if you don't smash your Xbox 360 to splinters (see above), chances are it'll temporarily go belly up on its own, thanks to widely-reported bugs causing regular crashes.

NOT

HEARD THIS? "For four months, Wikipedia depicted me as a suspected assassin." A former aide to Bobby Kennedy complains about the anyone-can-edit Wiki ethos. Meanwhile, its creator is introducing new restrictions on the site.

DUMB PROBLEM OF THE MONTH

QI've installed Battlefield 2 and I can't play it! Every time I go to the server browser I get no results. When I play offline it's fine, but I don't want to spend all my time fighting bots.

AReckon this one's straightforward. You've got a firewall on your machine, haven't you? It's doing its job so well, that you'd forgotten it was there, huh? Often, with games like BF2 that that don't allow task switching ([Alt]-[Tab]), the usual alert that pops up asking if you want to allow an application to access the net won't, and privileges are simply denied. There are two solutions: turn your firewall off before you play (not recommended); or configure its settings to allow the game access to the net. In ZoneAlarm, for example, you do this by going to Program Control, clicking the Programs tab at the top left and hitting Add.

Picture © Corbis



ADSL2+ Double-plus good?

Faster broadband may be further away than we think...

The release of unbundled lines by BT to internet companies has led to an explosion of ISPs offering 24Mb broadband services. Those in the know, however, warn of limited ranges and erroneously reported speeds. One of the UK's longest surviving ISPs Demon Internet has even greater reservations. It's common knowledge that the claimed 24Mb speeds from ADSL2+ can only be achieved within a few hundred meters of the exchange, but what people don't realise is that

there are generally around 300m of wires inside the exchange itself, so the chances of getting the full "up to" 24Mb speeds are slim. More realistic, Demon claim, are BT's own plans to make 4Mb the standard. Trials of 2-8Mb connections are underway and the roll-out should be complete by the end of 2006. But even these connections are not without limitations. Reports of interference from household TVs, microwaves and even metal furniture are plaguing the new services and the early word from LLU users on

ADSL2+ is that interference there is even worse. The higher frequencies required are more susceptible to electronic interference.

So are we finally seeing the limits of copper line infrastructure? Services like IP TV will struggle at lower than 8Mb and you can forget high-def at under 20Mb. As ADSL consumers, we hope that these are teething problems and that things will improve, while cable users cuddle their optic fibres smugly and companies like Demon invest in direct SDSL for business users.



Naked sticks

The media seem to be finally catching onto the idea of file-sharing being good for music rather than the evil,

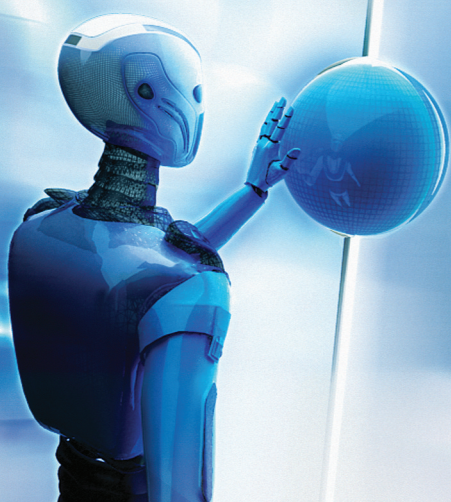
royalties-sucking, black hole that it is often portrayed as. Lovable Canadian

beat-combo, Barenaked Ladies, has released a 128MB USB drive that contains a full album, *Barenaked for the Holidays*, in the ubiquitous MP3 format as well as a host of other goodies aimed at fans of the band. It's fully reusable and is being billed as a 'fast and easy way to share music'.

www.bnlmusic.com

68%
STAT!

The percentage of people who've used instant messaging client at work, according to research commissioned by ICQ. Apparently, nearly one in four people send more IMs than emails.



**DESTROYING THE LIMITS
FOR CUSTOM PCs...**

www.vadim.co.uk

Microsoft backs 64-bit technology

Bill dumps 32-bit support from Longhorn...

Let's gather together, folks, and mark the beginning of the end of an era. For while 32-bit CPU architecture and instruction sets were enough to take the humble PC from being an office based work horse to the all round entertainment and lifestyle machines we know and love today, the death knell for such old school architecture has been sounded: Microsoft is withdrawing its support.

This has been in the offing for some time. AMD now exclusively manufactures 64-bit processors, and Intel is slowly following suit, while over in non-PC land, Apple's G5 generation machines have been 64-bit for a while now. Bill Gates' recent announcement that Longhorn Server and Exchange 12 will not be available in 32-bit varieties – and therefore will only run on 64-bit systems – seems to signify that Microsoft believes the time has come to cease costly co-development for old technology and focus on the future.

Don't panic for the future of your own machine just yet, though. All desktop varieties of Windows Vista will

come in both 32 and 64-bit flavours, and there's every possibility that network engineers the world over will refuse to upgrade just to run the latest MS apps, which would force a rethink.

We power-crazed fools at PCF believe you can never have enough bits, so anything which helps bring about a future where we all have supercomputers is to be welcomed.



Vista remains good for 32-bit home users.

NEWS IN BRIEF

Let's cyber

Around 39,000 spectators turned up to watch the finals of the World Cyber Games last November in Singapore. The three day event saw 73 countries competing for a total cash pot of almost \$435,000. The UK team only got a bronze medal in *Warcraft III*, so get practising for 2006's event in Italy.

Goody two-shoes

The designer of BitTorrent, Bram Cohen, has agreed to remove any copyright-infringing content that is thrown up by the search function on www.bittorrent.com. Cohen has never advocated distribution of illegal files, but this will probably help him grow a Hollywood-friendly image and earn a role in future media downloads.

Cash for questionnaires

Online dating: the solution to finding a mate in the modern world, or a way for desperate saddos to circumvent the laws of natural selection. We're torn – although in fairness the former is more likely. Allegations have been levelled against one of the largest services, www.match.com, in a US lawsuit

accusing it of paying people to go on dates and create profiles to make the site look busy. Sinister exploitation, or just a dateless dork lashing out? Match.com seems to have the evidence on its side at this time...

Trek tops charts

Kirk's corset can stay locked away for now as five Finnish amateurs have made a full length Trek-spoof. *Star Wreck: In the Pirkinning* features Hollywood-style effects created on off-the-shelf hardware. Its available at www.starwreck.com and best of all, it's top of the Finnish film charts.

QUOTE!

"Are you a Linux user? Are you a parent? If so there is something that the two have in common."
Linux goes to playschool at www.edubuntu.com

ICANN do it

Who benefits with the US retaining control over the net?

The United States has once again retained control over the internet's DNS servers, the nuts and bolts that hold the internet together. ICANN (the Internet Corporation for Assigned Names and Numbers), based in California, has long held the political and practical control of the distribution of domain names, and while it does have an international advisory body, the US government retains the power to veto any decisions, rendering it somewhat impotent in practice.

At the recent UN summit in Tunisia, a number of national bodies, including the EU, proposed that the control be taken outside of America,

citing the contradiction between the autonomous US control and the obviously international nature of the internet. However, an eleventh hour decision at the summit left ICANN within the States. Instead, United Nations Secretary-General Kofi Annan is going to create a new Internet Governance Forum, which will provide an international forum for the continuation of the debate, meeting next year. However, in a similar way to the previous organisation, this body will have no authority over either ICANN or the US government. As it stands, the situation has changed little, with the US having much the same influence as before.

www.icann.org

It's good because...

US Experience

ICANN was set up by the US Department of Commerce in 1998, and whether it has behaved fairly, it has successfully maintained the solidity of the internet for seven years. It knows what it's doing.

Freedom of Speech

Some countries wishing to take power from the States aim to control the content of websites in their own nation. The US belief in freedom of speech gives ICANN the ability to override this.

Bargaining Tool

Tom Giovanetti, president of the Institute for Policy Innovation, believes that "UN member nations would quickly realise that they could hold hostage changes to the internet. The internet would become a pawn in geopolitical squabbles."

On the other hand...

Government Pressure

The US government, and supporting religious groups, have direct influence over ICANN, recently demonstrated by the delay in launching the .xxx top level domain for adult websites.

Superpowered

The US, as the only global superpower, has demonstrated that it is willing to take unilateral action. With direct control over international domain access, it's conceivable it could use this power to its advantage.



Jeremy Laird
PROPHET OF DOOM?

Can't wait to get his filthy mitts on Windows Vista

It's a damned dirty secret to be harbouring. So, there's nothing for it but the catharsis of confession. I'm all juiced up about a Microsoft product. And it's none other than Windows Vista. Granted, PCF has already pointed out that Vista Beta 1 was a thoroughly broken and really rather threadbare release. But in combination with the features MS is promising for the final product, I've seen just enough of the new OS to view Windows XP with utter disdain.

Most of all, I'm completely bedazzled by the prospect of an all-in-one OS with integrated media handling (Media Centre Extender for everyone!), a decent graphical interface with real support for high-definition displays and a entirely new paradigm in file management. But woe, the inevitable has happened. The upcoming feature-rich Beta 2 release has been delayed, until perhaps as far out as the end of February. And surely the next casualty will be the "holidays 2006" final release date. But if I don't have Windows Vista spinning away on all of my hard disks by the end of 2006, I may lose the will to live.

Gearredup

THE HARDWARE ON OUR MOST WANTED LIST



Take a broad view

As standard the 15.4-inch panel offers a 1,400x900 native resolution. But for an extra £70, you can bag the full 1080p-compliant 1,920x1,200 monty.

Alien technology

A mammoth 17-inch screen is all very well. But in our not so humble opinion, the m5500's 15.4-inch widescreen LCD panel strikes the best balance between usability and portability for a performance notebook.

Visual splendour

We'd also recommend forking out another £31 to increase the video memory to a healthy 256MB, because upgrading after purchase is pretty much impossible.

Thanks for the memory

The entry-level m5500 sports a 1.6GHz Dothan Pentium M. We'd recommend bumping that up to the 1.86GHz model for a reasonable £68.

Flashy laptop



Alienware Area 51 m5500

Price £1,198 Available Now Web www.alienware.co.uk

An epidemic of giantism currently blights the performance notebook market. In fact, if just one more PC company sends us another 5Kg-plus, back-breaking leviathan based on the Clevo D900 chassis and running a desktop processor (we've seen such systems from at least five manufacturers already, including Alienware) we'll jolly well scream. Mercifully, Alienware's new notebook range looks much more sensible. For starters, it's based on Intel's economical but powerful Pentium M processor. It's every bit as effective for gaming as a desktop CPU. But the Area51 m5500's really interesting feature is its ability to switch between low-power integrated Intel graphics and a dedicated NVIDIA GeForce 6600 GPU at the flick of a switch. It's a very interesting novelty that might just deliver a killer combination of mobile staying power and plugged-in gaming grunt. What's more, at just 2.5cm thick and with a kerb weight of only 2.7Kg, it's almost exactly half the size and half as heavy as Alienware's beastly Area51 m7700.

Light fantastic



TV go home



GeCube Digital TV Walker

Price £50 Available Early 2006 Web www.gecube.com

This month's Geared Up mini-theme is a pair of portable gogglebox watching products. First up is this USB 2.0 digital TV tuner. The hilariously monikered TV Walker is a feature-complete HD and SD digital TV tuner with a full suite of time-shifting, one-touch recording and live TV pausing set-top box-alike functionality. As with many digital TV tuners, digital radio tuning is thrown in for free. But unlike many digital tuners, it's absolutely miniscule. Measuring just 7cm long, 2.5cm wide and 1.5cm thick, it's positively pocket sized. And because it draws all its power from the USB port, it's perfectly feasible to use the TV Walker on the move. Is digital TV on the InterCity 125 realistic? We don't know, but it'll be fun finding out.

Hot to trot



Pocket TV



Nokia n92

Price TBA Available Spring 2006 Web www.nokia.com

If the mobile merits of the GeCube TV Walker are somewhat unknown, there's no doubting what the new Nokia N92 is supposed to do. Put high quality digital TV in your pocket, that's what. In theory, the N92 is the ultimate 3G mobile telephony and multimedia device. It's based on the new DVB-H standard which sensibly sidesteps efforts to stream video over a data network in favour of old-fashioned radio broadcasting. Think of it as FreeView digital TV on a much smaller scale and you'll get the idea. Video playback is courtesy of a QVGA 2.8-inch LCD screen and storage takes the form of 2GB of internal Flash memory. That's enough, claims Nokia, to record up to 14 hours of TV content. DVB-H is currently being trialled in Oxford with a wider roll-out expected in late 2006.

Future phone



New year's resolution



VideoSeven LTV 27CH and LTV 32H

Price £579 and 799 Available Now Web www.videoseven.com

There was a time long, long ago when outputting games and video via your TV made a lot of sense. It was a chance to have some big-screen fun when PC monitors typically maxxed-out at around 15 inches of goldfish bowl-shaped dreariness. Fast forward to today, however, and the pitifully low resolution of a standard definition set is simply too much to bear for gamers used to bleeding-edge HD visuals. What's more, until very recently HD TVs were simply too expensive for serious consideration. Not any more. These new VideoSeven units are among the first of a wave of affordable(-ish) LCD-based HDTVs. Offered in 27 and 32-inch form factors, both sets have enough pixels to do full justice to a 720p HD signal, though the top-notch 1080p format remains out of reach, for now. And crucially, both support the upcoming HDCP encryption standard.

Hi-def heaven



In-car entertainment



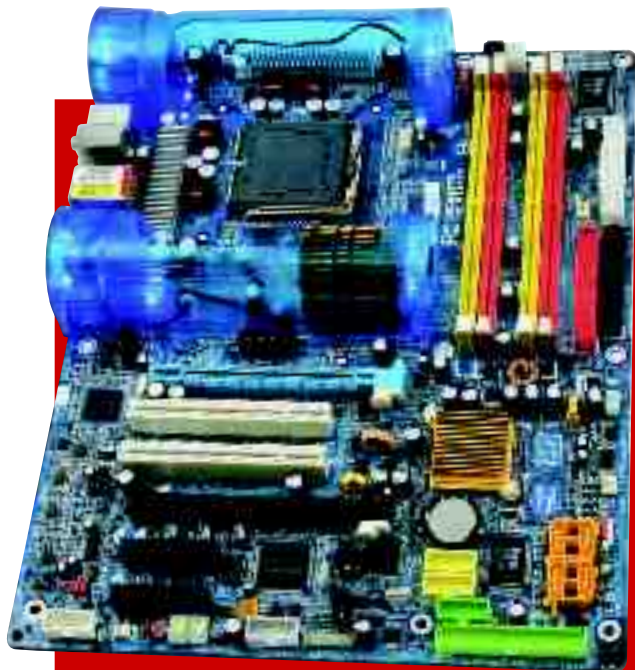
In Phase IPS920G

Price £150 Available Now Web www.inphaseaudio.co.uk

The MP3 audio format dominates mobile music. It's conquered the PC, and annexed the living room. But it's still a relatively new fangled technology for in-car audio. For sure, plenty of CD-based head units support MP3 playback. But we do find burning a couple hundred MP3s onto CDs several times a week rather tedious. Flash memory and portable hard drives are really where it's at. Usefully, this standard-sized car unit not only has an SD card reader, but also a USB port that provides support for flash and external hard drives. What's more, there's a well-specified 4 x 60 Watt amplifier and an aux input to allow direct input from your MP3 player.

Motoring music





PREVIEW NEW CHIPSETS

Format wars



Gigabyte GA-G1975X

Price TBA Available Early 2006 Web uk.giga-byte.com

Another month, another Intel chipset. Or at least, that's what it feels like. Indeed, if you were bold enough to fork out £150 or so for a top-spec Intel 925X motherboard, say 12 months ago, you'd have every right to feel pretty peeved. For starters, your board has now been gazumped by both the 955X and now the 975X. But more importantly, you've no choice but to suffer Intel's single-core Netburst CPUs. The 925X doesn't support the new dual-core chips. However, if you own a 955X board, don't start feeling smug. Intel has a revolutionary new family of processors pencilled in for launch in mid 2006 and the 955X ain't compatible with these beasts. But the new 975X is. And that makes it an awfully rare thing: a futureproof Intel motherboard. This Gigabyte effort is one of the first retail examples of the 975X and intriguingly boasts a pair of PCI Express graphics slots. Support for ATI's CrossFire platform has already been announced and we suspect NVIDIA will open up SLI for the 875X chipset, sooner rather than later.

No more Netburst?

Three alternatives...

DFI LANParty UT RDX200 CF-DR

Price TBA Available Early 2006
Web www.dfi.com.tw

Like the wheezing fatty in PE class, ATI's CrossFire platform has finally turned the corner towards retail availability. DFI is one of the first board makers to announce a CrossFire motherboard.



ECS PF22

Price £124 Available Now
Web www.ecs.uk.com

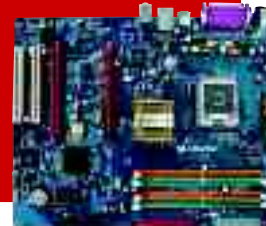
Ever the oddball mobo maker, ECS has launched a twin PCI Express graphics enabled board with support for ATI's CrossFire platform. But bizarrely, it's based on Intel's outgoing 955X chipset. Eh?



Albatron PX915P-2V

Price £50 approx Available Early 2006
Web www.albatron.com

Amongst all this high-end mobo finery, this Intel 915-based Albatron board is rather low rent. But if you're after something simple for your Celeron it provides all the basics as well as full 64-bit support.



INTEL'S COPPER CONUNDRUM PCF DEMANDS A BETTER HEATSINK



Could Intel's current desktop woes be solved with a simple heatsink upgrade? It's a question we've been pondering of late having experimented with Intel's dual-core Pentium D processors in combination with a high-end copper heat sink.

At standard clockspeeds, a chip like the Pentium D840 is a strong all-round performer. Best of all, it delivers the performance of a dual-Xeon 3.2GHz workstation rig in a reasonably affordable desktop package. But the standard Intel-supplied aluminium cooler that ships with the 840 and the rest of Intel's LGA775 processors, both single and dual-core, is an utter abomination. It makes a frightful racket, often fails to provide adequate cooling and does an outstanding job of making all of Intel's Netburst CPUs appear close to terminal failure. Bolt on a quality copper blower, such as a Zalman 7700Cu, however, and the difference is day and night. Suddenly, that baking hot, ready for meltdown Pentium comes over all peace and serenity. What's more, clockspeeds of 3.6GHz or

more with total stability and very little noise are achievable. A make no mistake, a dual-core Pentium D running at 3.6GHz makes mincemeat of almost any number-crunching task, including 1080p H.264 video content. And all for another £35 or so.

Now, the idea of a heatsink upgrade is hardly novel. But it does have us wondering. What if Intel offered an optional premium retail CPU package which included a high-end copper cooler? If nothing else, it would help Intel secure more favourable reviews from the IT press. But more importantly, it would make the Pentium D an attractive proposition for less experienced self-builders. Add an extra £15 or so to the £175 asking price of the D820 dualie, for instance, bung a quality copper cooler into the retail bundle and I reckon you'd have a killer combination.



Mobo makers should offer high-end heatsinks with their chipsets.

Gameslatest

WAFFLE-FREE GAMING GOSSIP

MORE SCREENS!
Check the coverdisc for more shots and video



James Carey
STUFFED TURKEY

Full to bursting with seasonal gaming goodness

The Christmas feast of games has left me feeling bloated and sluggish, too tired to lift my distended form from my gaming chair. I've gorged on a buffet of fatty blockbusters over the past month, the reviews section is bulging with such a selection box of big-budget tie-ins and there's little room for the gaming gourmet's subtle delicacies. It's a dangerous time of year. Everyone feels like they blew too much cash over the holidays on gimmicky tat, and the average gamer's collection is now fully stacked with game-gifts anyway; enough to keep them busy for a few months at least. No wonder publishers slow down over this period.

But, as some bloke once said, any society is only two meals away from anarchy, and our gaming society is no exception. It won't be long before our bellies grumble with desire for a piece of the action adventure pie.

Fortunately, it looks like we'll have a bumper crop of games in the New Year too, as the spread laid out before you over these pages demonstrates. So, leave that belt unbuckled for now, surely you've got room for another helping?



Hellgate will merge on and offline play as never before.

Hellgate London

Hell on Earth means heavenly gaming

DUE DATE TBC
PUBLISHER Namco
DEVELOPER Flagship Studios
WEB www.hellgatelondon.com

Picture Diablo as a plasma-blasting, sword-swinging first- (sometimes third-) person shooter, set in the demonic ruins of a future London. This is *Hellgate*. It's about blending genres and delivering

ambitions and a new office, the folk who brought you *World of Warcraft* and the *Diablo* games are now taking old ideas and injecting them with new twists. They're talking about online item markets, with offline play merging with an online community, while randomly generated dungeons mean every play

will be a totally new experience. You might have taken down demons in your time, but did you do so in a procedurally generated gothic London? Or did you explore in singleplayer to join up with some friends to roam a unique dungeon online with bazookas and magic, only to sell your loot later? *Hellgate* will do all these things, allowing players to have adventures both online and off.

"Randomly generated dungeons mean every play will be different"

surprising action. It's going to be an action-driven RPG where the frantic beast-slaying and loot-hoovering will be the most important aspect of the game, while at the same time meshing a lavish singleplayer game with some seriously clever online innovations.

Hellgate: London is the brainchild of designers from the original Blizzard development team, lead by founder of the *Warcraft* studio Bill Roper. Striking out on their own with new

Swords and scanners

It's levelling up, but not as we know it

So far Flagship has only revealed the Templar class, which is kind of a techno paladin who can use holy magic alongside a nice big machine gun. Interestingly, it's also intimated that skills will be randomly earned, rather than being awarded as part of a tree of definite progressions, as in most role-playing games. This means that your character will have a large degree of individuality and not suffer from the 'just another lvl33 shaman' situation that has deflated the suspension of disbelief for so many gamers.



Hellgate: a beautiful harmony of magic and really big guns.

GOSSIP!

Devs are closing ranks against their former publishers. Warren Spector and his new team, Junction Point Studios are joining Steam for their next title. Vive la revolution!

Paraworld

Big lizards are heading this way

DUE DATE TBC **PUBLISHER** Koch **DEVELOPER** Sunflowers/SEK **WEB** www.paraworld.com

Anyone remember a range of toys called *Dino Riders*? *Paraworld* is the gaming equivalent. Three scientists are trapped in a parallel dimension, populated by dinosaurs and various tribespeople. There are other travellers here and they're not all friendly; they use their knowledge of all things technical to fit the dinos with Gatling guns and other weapons of war. Cue an RTS of strikingly unique visual flair where thick jungles teem with teched-up reptilian danger. But it's not just artistically creative. There are some interesting stabs at RPG-style development too. Not just of the scientist heroes, but potentially your entire army. As units gain experience, they can be promoted to higher ranks using a simple sidebar interface, earning them new abilities and granting access to unit upgrades. There are limited

slots in the sidebar so you have to organise your whole army like a deck of *Magic: The Gathering* cards. The kit you attach to your dinosaurs is modular, allowing the player to create different combinations to suit their purpose. It's all pleasingly HG Wells-esque in style, with smatterings of steampunk technology and an encouraging amount of detail applied to every aspect of the game, from the artwork and strong narrative (there's over two hours of cutscenes) to unit balance and map layout. It could be a surprise RTS hit of 2006.

Dinosaurs with guns
in a steampunk
universe! Hurrah!



in the pipeline

A whole host of reasons why it will be a happy new year for us gamers

JANUARY

The Regiment

Once again we're plunged into the 'shadowy world of international terrorism'. It's the Brits' turn to get gung-ho in an SAS FPS. You get to train as a special forces operative and take part in fictional and historical campaigns, including lots of hostage extraction and terrorist killing. uk.konami-europe.com

FEBRUARY 2006

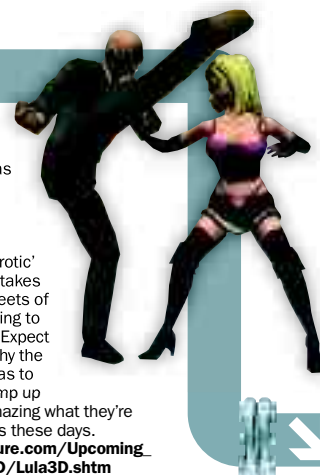
And Then There Were None

In this adaptation of the Agatha Christie classic you play aspiring detective Patrick Nethercott. Exploring the 3D world, you have to discover why you and nine strangers were brought to the creepy mansion on Shipwreck Island. The guests start dropping like flies and you must solve the mystery before the murderer comes for you. www.agathachristiegame.com



Lula 3D

Erotic movie producer, Lula, has to discover why three of her best mates have been kidnapped. This necrotic, sorry, 'erotic' action-adventure takes you round the streets of San Francisco trying to find your friends. Expect lots of reasons why the main character has to get naked and jump up and down. It's amazing what they're doing with physics these days. www.justadventure.com/Upcoming-Releases/Lula3D/Lula3D.shtm



MMOG Log

The latest gossip from the farthest reaches of the MMOG universe

The tiger economy of China has not gone unnoticed in Iceland. CCP has recently introduced a new race into **Eve Online** with its free expansion pack **Red Moon Rising**. As well as a staggering amount of new weapons, equipment and new ships (including the almighty Titans), the pack introduced Asian-themed bloodlines to all of the existing races, perhaps as a precursor to CCP's attempt to crack the massive MMO market in Korea and, increasingly, China. There was talk of allowing Chinese players to populate a separate area of the **Eve** universe for a while and then bring the western and eastern gamers together. The resulting culture-clash could've been interesting, especially now that **Eve** is UNICODE compliant, but at the time of writing, it looks like this won't happen.

Elsewhere, the **Battleground Europe** expansion of **WWII Online** has updated some of the models and weaponry as well as add some post-processing effects and new squad management controls. **WWII** is still almost unique among MMOs offering FPS warfare on a massive scale. The only trouble is it looks just awful. The update has gone some way to improve things, but it's hard to see the mass-market taking the game up as GMX and the highly dedicated community are hoping. www.mmoglog.co.uk



WWII Online's overhaul is not yet a thing of beauty.



Timeshift

Theory of relativity? Pah – bring on the guns!

DUE DATE Spring
PUBLISHER Atari
DEVELOPER Saber Interactive
WEB www.atari.com

Manipulating time is no longer the sole domain of Doc Brown and Marty McFly. We've all dabbled with the continuum in one game or another by now. We've rewound the clock in *Prince of Persia* and blasted away

in bullet-time during *F.E.A.R.* But rewinding time and slo-mo in the same game? Woah daddy, stop the presses! *Timeshift* is a sci-fi shooter that promises such clock-related tomfoolery in spades and more interestingly, in both single and multiplayer games. We've yet to see some really convincing multiplayer

time manipulation in a title but *Timeshift* is making it the focus of the action so fingers crossed. The game is powered by the proprietary Saber3d engine, designed specifically for cross-platform development between Xbox360 and PC so this could be the face of things to come. Let's hope it's a looker.

Faces of War

Squad-based WW2 chaos beckons

DUE DATE March
PUBLISHER Ubisoft
DEVELOPER Best Way
WEB www.facesofwargame.com

Gurning onto our screens next year is yet another WW2 RTS, *Faces of War*. Just how many digital Panzers do we really need?

Filling a gap somewhere between *Brothers in Arms* and *Commandos*, each mission sees you take control of six soldiers and guide them through battles. We're promised that these men will have impressive AI, thinking tactically about how best to execute your orders. The campaigns are based on real battles, allowing gamers to demonstrate how Market Garden

96 squads will be able to fight simultaneously. In a word, yikes.



should've gone down. Ubisoft promises that no two battles will ever be fought the same way. Up to 16 players will be able to pit their squads against one another (that's a possible total of 96 player-controlled units at once, bedlam fans) so there's scale for some serious online strategy too.

SPRING

Specnaz: Project Wolf

After the Cold War the Russians left bases all over the world stuffed to the brim with nuclear toys. In this tactical FPS you have to recover this sensitive material and return it to your government. As part of the Russian special forces you get to travel the world killing interesting and exciting new people. www.gmxmedia.net/specnaz/



Evolution GP

If you want to drive the dream machines of Bugatti you need to either become a proper racing driver, or a very picky car thief. Thankfully, this game lets you try the first option. Italian developer Milestone is hoping to produce a racing game that focuses attention on the driver's skills as much as the abilities of the cars he races. It is also promising the most advanced AI of any racing sim. www.blackbeangames.com



SPRING



A rival for *World of Warcraft*? We'll see...

D&D Online Stormreach

Perennial favourite retooled for 2006

DUE DATE Spring **PUBLISHER** Atari **DEVELOPER** Turbine **WEB** www.ddo.com

So it's finally here, the definitive pen-and-paper RPG gets the MMO airing fans have been waiting for. The port of Stormreach has been welcoming throngs of would-be adventurers for the past few weeks and we were among them.

We approached a dwarf and offered him a pint from the Wavecrest Inn, meeting place of all new adventurers. We found a host of other newbies clamouring around the bar – this was looking good. All the archetypes were there, itching to explore the new world.

Quickly we secured our first important mission from the barman, seems he was having trouble with that perennial thorn in the side of any bartender, kobolds in the cellar, so we thought we'd help him out. A few hours

later and a stack more bob-a-jobbing around Stormreach port, and we reckon we'd got the measure of the place. Early impressions are of cautious optimism. Initially there doesn't seem to be much to pull the masses away for WoW, but anyone who's ever rolled a D20 for a dex check won't be able to resist the lure of the D&D world. Dungeon instances are the usual, slightly disappointing fare and at this stage combat is pretty unwieldy.

To begin with there's not a great deal of opportunity to play your character as anything other than a fighter too, and this is potentially a huge problem. More than any other role-playing game, D&D has to be about, well, *playing a role*, or the fans just won't go for it. Be sure to check our review next issue for the definitive word.

SPRING



The Guild 2

Promising a cross between life sim and RPG, you start out as a lowly inhabitant of 14th century Europe. Building your character up, you can become mayor, buy your way into the aristocracy or even become a clandestine gentleman thief. Let's hope that the character design options allow for waxed moustaches. www.theguild2.com

Seven Kingdoms: Conquest

If you like your RTS games to span epochs, look no further than the third instalment of the *Seven Kingdoms* series. Beginning in 3,000BC Egypt you can play as humans or the demonic hordes as you battle for supremacy. The two races clash every 1,000 years and your troops vary accordingly.

www.enlight.com/7kc



D.I.R.T.

Playing as the strangely named D.I.R.T., you're a teenage girl imbued with special powers, thanks to an accidental trip to a top secret government research lab. Ah, every developer's fantasy, eh? You are able to approach each level differently, choosing from stealth, exploration or sharp-shooting, thanks to Deep Silver's new RPG Lite system. www.deepsilver.net

SUMMER



Tom Clancy's Rainbow Six Lockdown

Freedom isn't free

DUE DATE Spring
PUBLISHER Ubisoft
DEVELOPER Red Storm
WEB www.rainbowsixgame.com/uk/lockdown

There are almost as many games with Tom Clancy's name emblazoned on them as there are books, and there's another arriving in the Spring. The console version of *Lockdown* has been out on PS2 and Xbox since September, but Red Storm 'wanted some extra time to work on the PC version', it being the home platform of *Rainbow Six* games.

Red Storm is stressing that this isn't a port of the console version, with a redesigned interface, ramped up enemy AI and redesigned maps.

The console roots of the game means a break from the in-depth strategy elements of the other three titles in favour of a more action-orientated experience. Obviously this could alienate hardcore *Rainbow Six* fans, who revelled in spending 40 minutes setting individual waypoints, but could also make it more accessible for those of us with less time on our hands.



It's just like *Rainbow Six* without all that 'tedious' planning nonsense.

The Chronicles of Spellborn

The MMOFPS lives on...



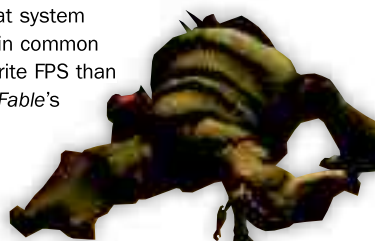
The natural successor to *PlanetSide* should be with us early next year.

DUE DATE March 2006
PUBLISHER Spellborn
DEVELOPER In-house
WEB www.thechroniclesofspellborn.com

The slow demise of *PlanetSide* has left the MMOFPS dream in tatters, with those thinking their perfect genre had finally arrived left starving on scraps of info about the likes of *Huxley*. However, there may be a saviour coming from an unexpected quarter. *The Chronicles of Spellborn* plays unlike any fantasy MMO around. At a recent demo we were shown a combat system that has more in common with your favourite FPS than *WoW*. Imagine *Fable's*

combat, but without the auto-lock. Players dance around each other, lining up crosshairs to throw spells and thrust swords. The attacks are determined by a deck of skills you load into a tumbler that rotates dynamically every time you 'fire' with the mouse. So if you wanted you could just set up a row of sword thrusts and hack away with the same blow, but the idea is you create combos of thrusts, spells, special moves and so on. You set up five of these sequences and bind them to the number keys 1-5, just

like you would use different weapons in an FPS. This combat system is only one small part of a game that looks like it'll be busting genre traditions all over the place. No dropped items from monsters, progression of your entire faction through conquering contested territory, time-travel. Look out for a much more in depth preview in the new year.



GOSSIP!

Multiplay is set to manage the framework for prizefight.co.uk, a for-money online gaming league. The popularity of online gambling has convinced some city types to bank on it being the Next Big Thing.

AUTUMN

Girlzz

For the gender-confused, or just plain curious, you can now experience the heady highs and perilous lows of life as a teenage girl. This real-time life sim puts you in the role of a teen trying to make her way through the bitchfest that is the Californian high-school hierarchy. It's all about manipulation and people management, just like politics with added cheerleaders. www.girlzz-the-game.com



Diabolique

Play out all your obscene demonic fantasies as super-suave agent of hell, Dark Eaville in *Diabolique*. Filled with bad intentions and battling to keep your powers in check, it's down to you to retain a balance between good and evil by making sure those forces of light don't shine too brightly. www.diabolique-game.com



AUTUMN



Watchthisspace

IT SEEMS THAT E NO LONGER EQUALS MC^2

Slowed down light

The weird-looking images are scans of 'slowed light', believe it or not.,

Sluggish photons make speedy computing

European scientists, lead by a UK team, are figuring out how to slow down light, paradoxically to speed up data communications. The Ultrafast Photonics Collaboration (UPC) is an Interdisciplinary Research Collaboration funded by the Engineering and Physical Sciences Research Council, and its job is to 'slow down' a ray of photons for use in light-based computing.

The bottlenecks in the internet are generally caused by electrical systems. The faster parts are the fibre-optic systems,

where data travels as light. The electrical parts of computing systems are reaching the limit of their speeds, and as we want greater performance we must turn to the light option. "We can only store light by converting it, for example into electricity, as is done with a photodetector, or by using a laser to burn a spot into a CD," UPC's Professor Thomas Krauss explains to government science journal *Newsline*. "This is not very energy efficient. If we had slow light optical delays we could store light directly, without having to convert it." Krauss and his team are

working on making systems that only use light, cutting out the electronic middleman.

To slow light and introduce faster networks, Prof Krauss and the other UPC scientists have been experimenting with 'photonic crystals', miniaturised circuits which can catch and 'buffer' light. This could lead to technologies which would replace the silicon systems we use today. Where today's fastest systems run at around 40 gigabits per second, photonic crystal systems could take speeds up to 10 terabits a second, a three-fold increase and a giant leap in performance for personal computing. www.ultrafast-photonics.org

My car runs on metal

Research at the Oak Ridge National Laboratory in Tennessee has concluded that the next generation of mainstream motor vehicles might not run off fuel cells or electrical batteries at all, instead they could run on powdered metal. Powdered iron, or boron as it's known, can be burned just like any other fuel, and provides sufficient amounts of energy for a family saloon. The advantage is that it's clean and can also be reversed, with a quick treatment of hydrogen turning the metal back into powder, and therefore back into fuel. www.ornl.gov

This month in Science
February, 1971

Alan Shepherd became the first man to hit a golf ball on the moon. The mission returned samples of moon rock, but the team failed to scale a 400ft crater rim when Shepherd's heart rate peaked at over 150BPM.

Disability gadgets

'Smart clothing' could make a big difference for visually impaired computer users

One of the main aims of technological research is to find intelligent, new uses for existing gadgets. One such new development is the Mukana, from Finnish design studio Sauma, which integrates lots of gadgets we're all familiar with in a way that would be useful for the visually impaired. Mukana is essentially a bag worn over the torso, chock-full with a collection of mobile technologies.

The garment contains a cellphone, a wireless headset, a GPS module and voice recognition software to allow the wearer some control by speaking to it alone. Other controls are accessed through a 10-key Braille number pad mounted on the front of the system. The Mukana system could allow visually impaired people to get around more easily, with the GPS system, for example, to assist navigation. There's also a small battery pack, which allows the wireless headset to recharge.

Mukana is still a prototype, so for a range of Braille computing interfaces and text readers that you can buy today, head over to www.humanware.com, and browse some of its hardware for the disabled. www.saumadesign.net/mukana.htm



The garments could make PCs more accessible.

THE BEST ZOMBIE SITES

Brains 4 Zombies

www.brains4zombies.com

The number one site for purchasing brains, this online store caters for zombies of all tastes. Customer reviews include, "I ate this brain expecting flavour, texture and expecting to regenerate my ailing physical form! Brains! Must eat brains!"



All Things Zombie

www.allthingszombie.com/index.php

A dead straight site on everything you need to know to keep up with the lifestyle of the modern zombie, including games, movies and even regularly updated news.

Zombie Infection Simulation

kevan.org/proce55ing/zombies

A superb Java application that demonstrates the speed at which a population would be taken over by zombies. Now also includes a zombie MMO by the same creator.

Zombie Movie List

www.horror-wood.com

A site containing plenty of useful information on our undead, brain-chomping friends. Hidden within the site is a list of the top 33 zombie movies, to keep you occupied until the next serving of chilled brain arrives.

The webpages

THE LATEST ONLINE DEVELOPMENTS



Company CEOs are adopting a more tolerant attitude to employee blogging.

Dare you blog?

Many CEOs are in favour of employee blogging. Or are they?

American CEOs are recognising employee blogs as a useful tool in business.

According to a new study, 59% of bosses stated that their employees' blogs were a helpful means of internal communication within their businesses. The PR Week and Burson-Marsteller survey also found that 47% of the bigwigs recognised a blog's use for communicating directly with external audiences.

Despite their enthusiasm for this openness, though, only 7% of the 131 CEOs asked kept their own blogs.

Employer confidence regarding blogging was recently demonstrated by IBM in India. An Indian employee left his job after a dispute over the content of his personal blog because he had quoted an unfavourable article about a privately run management school. The heat was put on when it was noticed



Sports

RPS-25

Rock, Paper, Scissors has been a popular pastime since the invention of, er, scissors? Presumably they must have been invented after paper, or else what were they initially created for? Before then, the game would have been known as Rock, Paper, Tearing – and would surely have been far less popular as a result. But if you're anything like us, you'll have discovered that this trilogy of options is not nearly enough for the modern, sophisticated mind. We need more alternatives, dammit.

Which is where RPS-25 comes in. Having originally mooted the idea of a sport called RPS-15, www.umop.com finally decided to put an end to all the debate, and revealed the ultimate in Rock, Paper, Scissors expansion possibilities. There are a few issues with the design, the first being the 15.5 octillion (15.5×10^{27}) possible ways of laying out the options for all 300 possible results. New categories available when playing RPS-25 include: wolf, sponge, dragon and cockroach.

www.umop.com/rps25.htm



Stalking

CELEB SAFARI

There's only one thing weirder than asking celebrities for autographs, and that's filling your clothes with puréed carrot and wedging yourself into a phonebox. But people who insist on having their photograph taken with whichever recognisable face they stumble into are even weirder, in our opinion.

Celeb Safari collects together these disturbing and ultimately valueless images of known and unknown combined, and displays them for you to stare at, safe in the knowledge that it wasn't you. Describing itself as "Community submitted, non-professional photos of celebrities out and about," the site will reward any submitted stalkergraphs with a Celeb Safari t-shirt. Presumably the ultimate achievement would be a photograph of you with a celebrity while wearing a Celeb Safari t-shirt. Or would that be too creepy for words? We can't quite decide.

Celebrity luminaries appearing on the site include Anna Nicole Smith, David Hyde Pierce, and yes, Weird Al Yankovic.

www.celebsafari.com



Colour perception

MAGIC EYE

There comes a point in every child's life, when having previously believed that everyone understands the world in exactly the same way as they do, their mind flicks on a switch that recognises perception might be in the eye of the brainholder, and by no means universal at all. This discovery usually takes the form of a train of thought that runs something like this: "How do I know that the blue I see is the same shade of blue that you see, or even if what you see is a shade of blue at all?" Then a fraught evening is spent staring at the ceiling, scared that the sky might in fact be blood red, and you're the only one who can't tell.

R Beau Lotto's range of fantastic illustrations found online at echalk (a home for teachers looking for materials to use with those newfangled interactive whiteboards) demonstrate that even the blue which we see might not be blue at all. The three experiments will bewilder your mind, and have you questioning perception all over again.

goto.cream.org/echalk

that this particular school was a customer of IBM. Its 1,500 ThinkPad order was enough to give the Indian Institute of Planning and Management cause to make demands that the statements were removed from his site, throwing deadlines at the IT giant. IBM stood behind its employee, and gave him no instructions to change anything, but Gaurav Sabni resigned all the same, "to avoid unnecessary headaches for IBM."

BLOGGERS BEWARE

The wider implications of this development are now being explored, with investigations into whether a blogger can be sued for defamation under Indian law currently in progress. It's a repeat of a process carried out in the United States recently, where employee blogs have been responsible for a number of high-profile firings. Ellen Simonetti was famously fired from Delta Airlines last year for her blogging antics, and earlier this year Google employee Mark Jen was sacked only 11 days into his employment, because his blog contained criticisms of the search engine behemoth. Other companies to have kicked people because of their

blogs include Friendster and Microsoft.

Whether IBM's stand is indicative of a greater tolerance of employee blogging is yet to be seen. If the survey results are true, openness may be the future face of modern business. Still, it might be wise to be careful what you write about. **PCF**

"Employee blogs have been responsible for some high-profile firings"

Forum Evil Avatar

This daily gaming news site has a forum frequented by all the top bods in the games industry, as well as all the usual morons that ruin every forum in existence. A good place to argue out current gaming issues.

www.evillavatar.com/forums



Criticism BABY REVIEW

In the interests of full disclosure, we should perhaps point out that this site's full title is Baby Review: The Infant Assessment Journal. For far too long, babies have been exempt from criticism. Obligated to pretend the hideous screaming wrinkly little creatures are the most beautiful thing in the whole world ever, many an individual is fit to explode in fury. Finally someone is prepared to allow freedom of speech.

Thanks to this site's frequently updated reviews of babies, the infantile idiots are getting the recognition they deserve: the recognition of being boring and rubbish. Below is a typical example of the standard of journalism we demand, and can now finally expect.

"The canvas is an infinite space upon which true artists impart their subconscious, taming the blank chaos with colour, depth, richness and meaning. What Joshua did, instead, was revel in a self-induced Crayola seizure, then have the audacity to present it as art."

www.babyreview.com



Economic science THE ONE-DOLLAR COMPOUND MICROSCOPE

Microscopes are awesome. They make regular things look really gross, and gross things look barf-inducingly disgusting. That's what science is for.

Microscopes can often be inhibitingly expensive, however, preventing you from embracing the true foulness of what everything looks like when it's much nearer to you. Which is where a one dollar compound microscope is useful. And hey, that's only about 65p.

Detailed instructions are given for building your very own magnifying device, including guides to the 'rotating diaphragm', which should certainly add some spice to an otherwise witheringly mundane task.

Part of the 'Fun Science Gallery', this had better prove fun, or there will be lawsuits. Still, building your very own microscope is pretty damn geek-cool if you ask us. Go ahead, build one – you know you want to. You geek.

www.funsci.com/fun3_en/ucomp1/ucomp1.htm



John Walker
IS AGHAST

Copyright watch

You've already heard our take on the Sony rootkit debacle.

John Walker has this to say...

The pickle Sony has found itself in over its latest foray into the world of unmitigated greed has raised ire and eyebrows all over the world. Which is interesting, as what it did is no new attack on our basic human rights. Corporations are pulling these sorts of deceptive DRM-bending, digital-liberty removing fast ones on a shockingly regular basis. So why did everyone sit up and take notice this time? It's because Sony's attempt broke something we were using.

It appears that we, as a public, are willing to accept any degree of rights violations, let Sony install all the malware it can fit on our hard drives, and agree to whichever draconian and inhuman licence agreements it wishes to impose, as long as they don't prevent us from checking our email.

A few bloggers are beginning to take this idea to an interesting conclusion. Skimmed Cream (skimmed.cream.org/?p=13), and LXer (tinyurl.com/a6yt7) suggests that perhaps the sorts of actions Sony took are exactly

what we should be encouraging. Reflecting on the response to the prohibition of alcohol in 1920s America, the idea put forward is to let these companies continue in their current direction. Their greed is so powerful, as Sony has demonstrated, that they cannot think or act in a rational way. Allow this sociopathic irrationality to show through. Let them disturb our daily lives now, rather than the slow, drip-drip erosion that steals our future, because it appears that only then are we prepared to say we care.

The obvious metaphor is of the small, skinny ninja using his large, muscular enemy's own weight against him. The peepy voices of a few bloggers and an angry columnist don't have enough strength to topple these corporate behemoths. But the behemoths themselves have more than enough on their own. Their voracious gluttony is the most powerful weapon we have against them – let's positively encourage it! Come on RIAA, sue more children!



Will your PC soon be stuffed full of music industry malware?

PCFMail

DISCUSS HOT TOPICS AT forum.pcformat.co.uk



GET PCF THE EASY WAY!
SUBSCRIBE ON PAGE 152



Recent SWG changes have been met with controversy.

Star satisfied

The recent changes in *Star Wars Galaxies* are excellent – anything that gets rid of the whining, complaining, selfish, noisy, irritating, ignorant, “I33t” players and makes room for the rest of us who just want to play the game and have a bit of fun is perfectly fine by me.

Speaking as somebody who has been playing SWG for just over two years and has recently lost a few good friends to the ‘New Game Enhancements’, I’m enjoying SWG more than ever. What people need to realise is that these changes needed to be made to let the devs do their jobs (the old system was just too big to manage). All the players who complained about everything before the NGE update, are

continuing to complain when the devs address all their issues – they will

OVER TO YOU
Is upgrading an utter nightmare?
Turn to p162 to find out

never be happy, and I’m glad to see the back of some of them.

SWG finally has the chance to develop and reach its full potential, and I’m looking forward to the next few months and beyond. I know I’m not alone in these thoughts, it’s just a shame that the negative minority are as vocal as they are. May the Force be with you (and all that stuff).

MARK HARRISON

PCF says Each to his own, but our opinion is clear on page 98. It’s good to see someone prepared to go against the flow of popular opinion, though, so kudos for that.

Dell’s bells

I’ve just received your Christmas edition through the letterbox to find you are still showing Dell’s 24-inch monitor priced as £670 and thus still list it as your favourite monitor. While I agree that at this price it is fantastic, the Dell site (www.dell.co.uk) lists the monitor at £938.83 and has been doing so for as long as I’ve looked.

Now, even with 17.5% VAT added to your cost (£670 + 17.5% = £788) that still leaves almost £150 difference. Either this is the premium of all delivery charges or Dell is charging a higher price.

I hope you can either tell me I’m wrong so I can go and order this monitor or re-think your accreditation.

JOHN MAINWARING
john.mainwaring2@virgin.net

PCF says We shall smugly stand by our score, although PCFormat

is prepared to ‘fess up to the idea that we perhaps didn’t point you in the right direction. Have a look on www.aria.co.uk to find it at the price we quoted.

FAO John Walker

Keep sticking it to them,

Kind regards,

MATTHEW DICKSON

matthew@dicksonfamily.wanadoo.co.uk

Big screen

I bought a BenQ 6200 DLP 1,024x768 projector in September 2004 and I thought I’d let the readers know how fantastic it’s been for the last 14 months.

Seriously, when you can watch top films on an 80-inch screen with surround sound it’s the best. The projector is bolted to the ceiling with cables neatly hidden inside trunking. I use a Nebula TV card and can happily report that TV also looks great at 80”. NVIDIA’s nView lets me switch between the big screen and a 17” TFT using a higher resolution. My wife has done all the Christmas shopping online using the big screen and bluetooth keyboard from the sofa! She says size does matter but it’s great because we can pull up the screen after and, hey presto, no TV in the room! My PC is near silent due to a quiet PSU and CPU fan. In fact the only downside to

this setup is the noise from the projector, which for some people may be too much but I just pump up the volume and drown it out.

I don’t even need to tell you what *Half-Life 2* looks like, even at 1,042. So kids, forget that big telly, get a projector; it’s the daddy.

TIM PROFFITT-WHITE
taltimepw@yahoo.co.uk

PCF says We’re glad you’ve had a great experience with the joys of an enormous, wall-sized display (something we have always been big fans of). Thanks for sharing your recommendation, and look out for other ways to hack your home in next month’s issue.

More graphics madness

I have just got myself a lovely 7800GT 256MB. So I thought I wouldn’t have any worries running the latest games at a reasonable resolution, so I decided to download the F.E.A.R. demo.

After waiting an hour on a 1MB line I installed it, and it looked great from the start, but then, to my shock, my machine froze up.

What’s the point in releasing games if only 5% of us can play them at a decent framerate? I know the GT isn’t the very top of the range, but, run the latest games.

I might just sell the card and buy a Xbox 360 at this rate. Game



Mail of the month

Having been disappointed with virtually every MP3 player review I have ever read, I was hoping this would change with PCF. The problem is that a really important feature, or lack of it, always seem to get overlooked: gapless playback.

As great as the iPod may be, I will never buy one because it can not play my albums properly. Listening to any live gigs, dance mixes, audiobooks, opera and many others genres is ruined by the short period of silence inbetween each ‘track’ when the audio should flow seamlessly from one track to the next. Of my 200+ CD’s, a good third require gapless playback. Ripping the whole CD to one

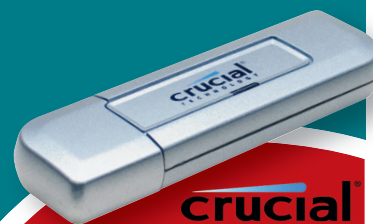
long file is pointless and it makes navigation awful. We have had gapless playback since vinyl, so why not now? The only devices I’m certain do are the Sony NW series and I’d buy one of those over the iPod any day.

Before you say it’s a format issue, it’s not. It can be implemented with any format with relative ease. Please could you take this into account when reviewing MP3 players in the future and thus further widen the gap between PCF and the PCF wanabes.

DOMINIC EVANS
dom.r.evans@gmail.com

PCF says Unfortunately, no MP3 player is flawless. What’s a proud

feature on one player will be conspicuous by its absence on another. The Sony players may be capable of gapless playback, but they’re damned by awkwardness and atrocious software. While a silence between, say, two tracks on the PCF-beloved Jeff Wayne’s War of the Worlds is jarring, it must for the time being take a back seat in our reviews compared to what concerns the majority of potential purchasers – ease of use, aesthetics, sound quality and software.



Mail in and win

We’ve teamed up with ace memory suppliers Crucial www.crucial.com/uk to give the author of our letter of the month a fantastic 512MB Gizmo! USB memory drive worth over £30. It works flawlessly with every version of Windows after Me.

You can air your views and write to the team at PCF Mail, PCFormat, 30 Monmouth Street, Bath, BA1 2BW, or via email at the address below. Or you can visit our forum at forum.pcformat.co.uk.

pcfmail@futurenet.co.uk

Forum fad of the month A chance to say thanks

Find this thread at:

forum.pcformat.co.uk/viewtopic.php?t=40076

I don't like complaining so let's have a chance to say something positive. I'd like to say a huge well done to the Didsbury District Nurses who have been absolute stars looking after me. They went out of their way to ensure I had the best possible care. (No bawdy jokes please) One of the nurses has even arranged to take time out of her weekend off to dress the wound in Lancaster while I'm visiting my girlfriend. They are a real credit to the NHS. They deserve

medals. So what good things have you got to say?

CRINGER

PCF says: The seasonal spirit captured our forumites as they all queued up to say nice things. Compliments went to parents, mirrors, the Portuguese (for fortifying wine) and the inventor of the cochlear implant. Most importantly, people thanked our volunteer mod team for making our forum a pleasant place to be.

manufacturers should stop making games with amazing graphics and start making games that run well and have great gameplay.

ROBERT HARDING
bustamoonshine@hotmail.com

PCF says Good luck to you if you're trying to buy an Xbox 360 at the moment. They're rarer than a steak

carpaccio and you'll be missing out on a lot of joy. As for F.E.A.R. - don't panic. There was a known problem with the demo and NVIDIA cards - the full game should run perfectly on your system. You didn't specify whether you tried any other recent titles, but you should find the 7800GT's performance in the latest games very satisfactory.

Win a 1GB SanDisk DAP

The government are always banging on about how everybody should use public transport more and this is indeed a very laudable endeavour - the only problem is the other people. Now, call us cynics if you will, but even a short journey on a bus or a train sees your poor ears assaulted by the maddening chirruping of mobile phones or the scratchy, aggressive whispering of badly designed headphones.

However, we know how important public transport is to the world, which is why we've got together with SanDisk to help make your journeys a pleasure not a chore. We're giving away four of its 1GB Digital Audio Players to block out the sounds of the underground, so there's no need to start writing to your MP about how the greatest PC mag in the world is warning people off public transport.

The SanDisk DAP uses embedded flash memory as opposed to the normal rotating hard drive and because of this it's tiny and power-efficient. You'll get an idea of the scale of it by putting your thumbs together - it's that small. It holds an impressive 1GB of data and can be used like a drag-and-drop USB storage device. There's also an FM radio tuner and a handy built in voice recorder.

All you have to do to win one of these beauties is log on to our website at www.pcformat.co.uk/competitions and answer the following question:

WHAT DOES DAP STAND FOR?

- a) Download Audio Product
- b) Digital Audio Player
- c) Delicate Apple Punisher

Terms and conditions on the website



A slinky little number in silver.

Invoke your Imagination....

Fast and Silent graphic card solutions from **SAPPHIRE**

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Price - Performance.

Experience best in class gaming performance from Sapphire with the X800 GT series.



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novatech
www.novatech.co.uk





38 **BEST-EVER** **TROUBLESHOOTING** TIPS

Mike Abolins says start the New Year as you mean to go on, by busting bugs and blue screens





KEY

-  Gaming
-  Hard drive
-  Windows
-  Old PC
-  New PC
-  Wireless networking
-  Internet
-  Video playback



1 See no evil

Adding a second hard drive to your PC is easy; set the jumper on the back to slave, plug in the power and IDE/SATA cable and you're done. But Windows will need persuading, so to have the drive recognised open the **Control Panel, Administrative Tools and Computer Management**. Under **Storage**, select **Disk Management**. Your new drive will be labelled **Disk 1**; right-click on it and select **Initialise**. Then right-click on the unallocated portion of the disk and click on **New Partition** and follow the wizard that launches.

Photos: Simon Lees

★ 2 Bad boot

Identifying startup faults

- 1 Connect the PSU and connect only the CPU (with cooler) and case fan to the motherboard. Plug in the power and turn on the system.
- 2 The fans should turn and your BIOS should POST, issuing a series of long beeps. This means you've got power going to the motherboard and it's searching for memory.
- 3 Turn off the power at the mains and install a RAM module in the first bank (marked 0 or 1) and then restart the system.
- 4 You should hear one long and three short beeps as the motherboard searches for a graphics card, indicating that the RAM and processor are working.
- 5 Turn off the power again and install your graphics card and connect it to a monitor. Restart your PC.
- 6 The cooling fan on the graphics card should be spinning and you'll be able to see the BIOS messages on the monitor. Ignore any disk boot failure error messages.
- 7 Turn off, connect your hard drive and optical drive and restart. If nothing's failed this far, it's likely to be a hard drive problem, so reboot and scan your disk or reformat it.

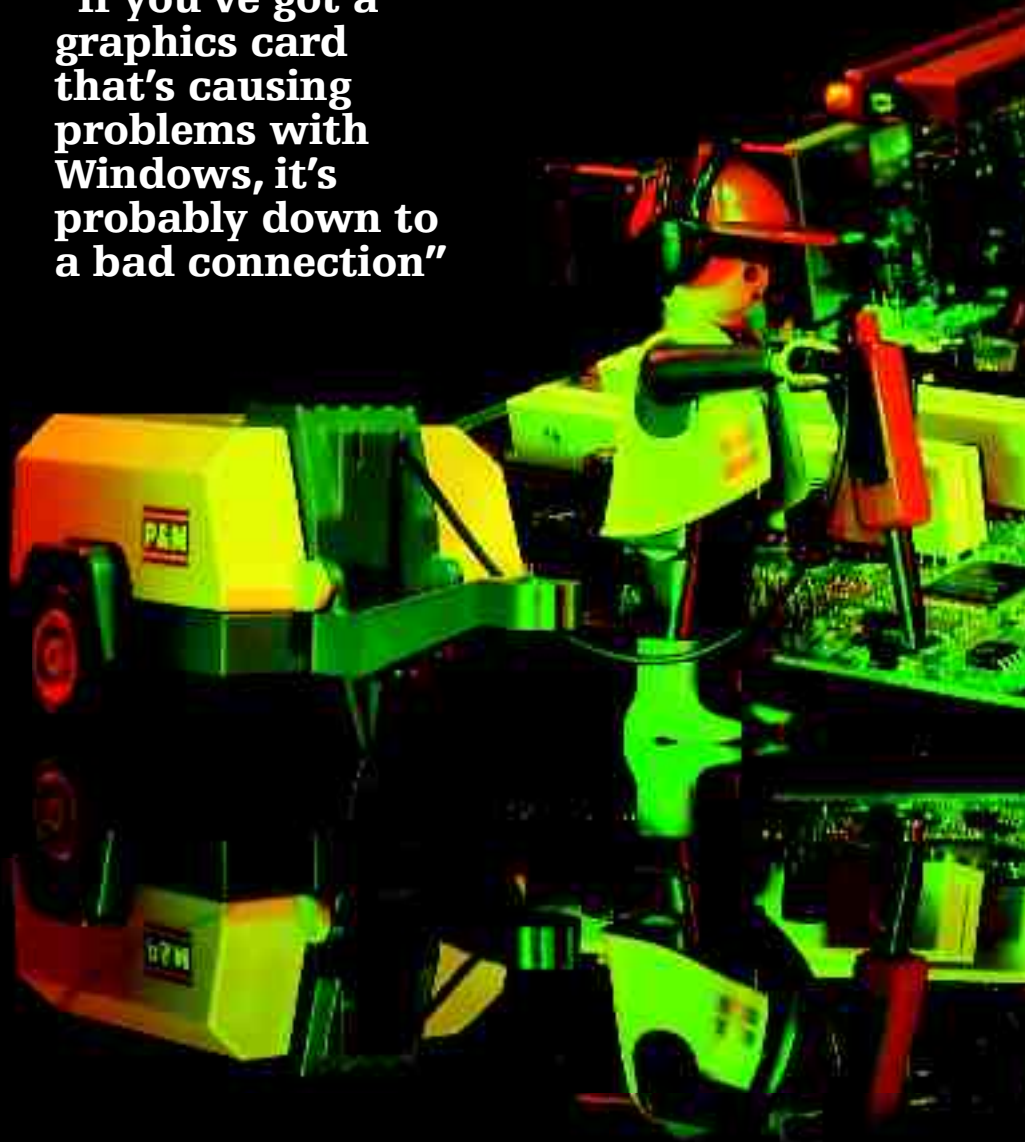
↻ 3 Restoring your hard drive to DMA

Certain system errors in Windows XP can cause your hard drive to switch from the faster DMA data transfer mode to the slower, antiquated PIO mode. This often occurs when there's an error transferring data from the drive (a CRC error) and if it occurs six times, Windows will drop the drive, step by step, from UDMA level four to zero, where it'll switch to PIO. A system restart will normally remedy the problem but if it doesn't, open the device manager and look under IDE ATA/ATAPI controllers, opening the properties of the channel upon which the drive's installed. Go to **Advanced Settings** and select **DMA if available** in **Transfer mode**. If it already says DMA if available, yet the current mode is PIO, select **PIO** within the **Transfer Mode** drop-down menu, click on **OK**, and then re-select **DMA if available** to toggle it back on.

▶ 4 Custom resolutions

If you're having trouble setting up your NVIDIA 3D card's screen resolution to work with a widescreen TV or digital projector, you can configure a customised screen resolution yourself. Open **Display Properties**, click on **Settings**, **Advanced** and then on the specific tab for your graphics card. Under the NVIDIA sub-menu, go to **Screen Resolutions & Refresh Rates** and you'll be able to specify your own custom resolution and refresh rate.

"If you've got a graphics card that's causing problems with Windows, it's probably down to a bad connection"



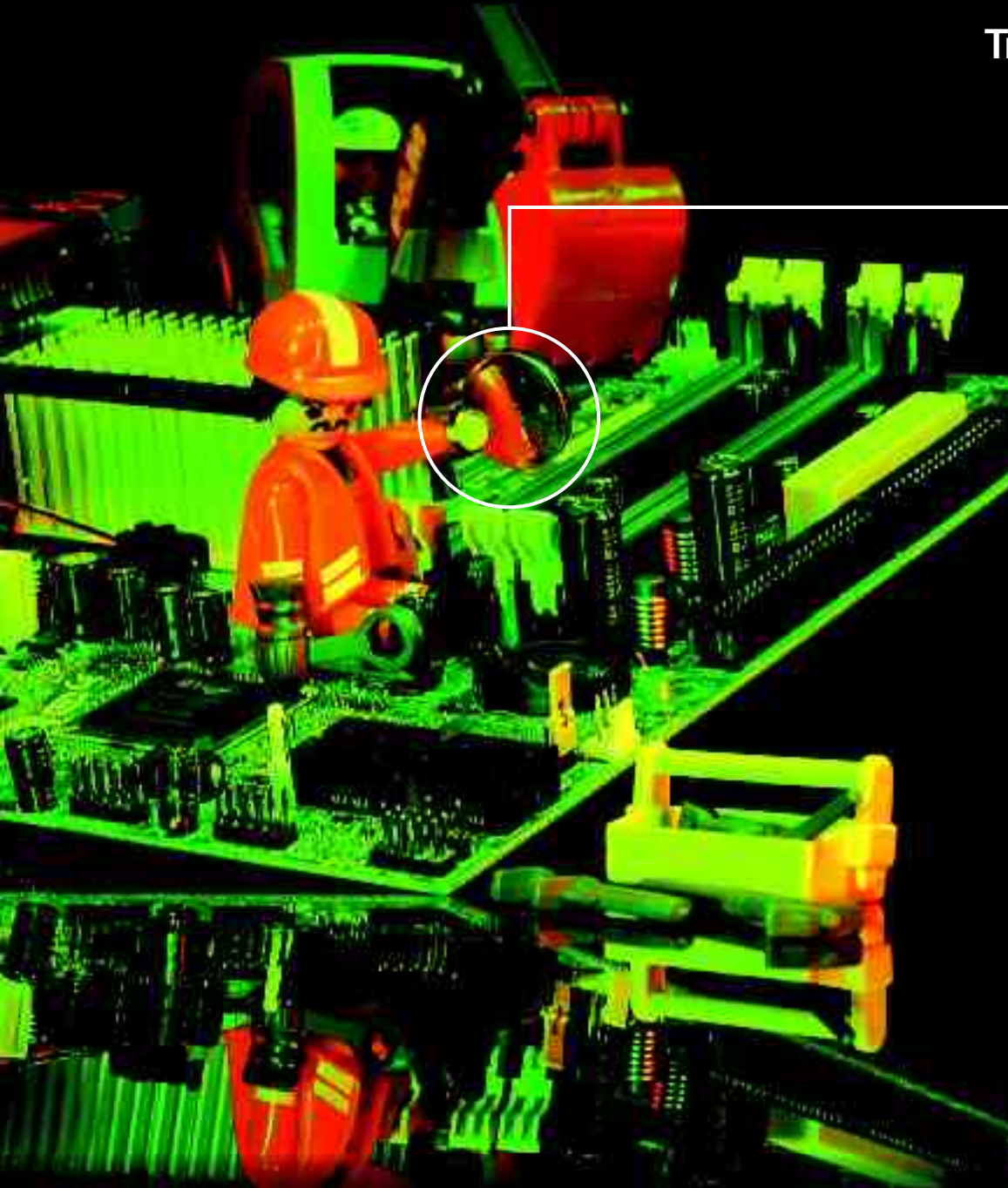
- 5 **Falling at the POST**
If your PC won't even make it so far as to post into BIOS, take a deep breath. Then check all your cables, expansion cards and memory, inside and outside your case. If that still doesn't fix the problem, unplug the power cable from the wall, prise out the flat CMOS battery from its housing on the motherboard and remove the jumper to clear the CMOS. Leave it for a minute or two then replace the jumper, battery and power cable, in that order.

↻ 6 Installing XP on SATA

As wonderful as XP's installer is, it's baffled by your average SATA drive. You'll need a set of drivers on floppy disk and these will come enclosed with the hard drive if you've bought a retail pack. If they come on CD, copy them to a 3.5" floppy or, if you've got an OEM drive, download them from the manufacturer's website and copy them over. Then hit [F6] when prompted to load SCSI or SATA drives when the installer starts up.

- 7 **Drunken monkey**
If you find your PC falling over and can't spot any problems in the Device Manager, you've probably got a duff RAM module. Download *Memtest86* from www.memtest86.com; it's a free app that runs from a floppy and gives your RAM a deeper scan than Microsoft's memory checker.





15 Batteries not included

Bothered by that "BIOS checksum error, press F1 to continue..." message upon starting up that old PC that's not run in a year or more? No worries – swap out the old CMOS battery for a new one.

16 Rubbed up the right way

If you've got a graphics card, soundcard or even RAM module that's causing problems, particularly preventing Windows from booting, it's more than likely a poor connection with the motherboard. Dust and grease, particularly on older components, can impede the connection, so remove the offending expansion card and use a pencil eraser – yes, an ordinary rubber – to wipe clean the contact points. It's a trick that'll work on almost any connector, whether it's a switch, expansion card or plug.

17 Live and let BIOS

Just don't do it. Updating your PC's BIOS can be as much of a path to trouble and strife as hosing down your system's internals is when getting rid of dust. Whatever the problem you're suffering, confine your amateur tinkering with the BIOS to FSB speeds and the like. If you're having problems with your processor not being recognised, just plug it into a working system owned by a friend or family member. If it's not recognised in their healthy system, odds are the problem lies with the CPU, not the BIOS.

8 Take the Scheduler to task

Think your scheduled tasks are running regularly on their own? Don't bank on it; you should check that your scheduled backups, disc clean-ups and defrags are actually happening as you intended. If they're not, open **Scheduled Tasks**, right-click on a task and view its **Properties**. Make sure that under the **Task** tab your Windows user account is specified in the 'Run as:' field and reset the password. If that doesn't work, close the task's **Properties**, click on **Advanced** and **View Log**. Search for '*****' – this marks the most recent entry – and keep an eye out for error reports.

9 The WLAN down under

Got a patchy wi-fi signal? Move the antenna so that it's horizontal rather than vertical. The signal is at its strongest in a hemisphere emanating from the antenna, like a globe with the lower half chopped off, so if your PC is below your router, the signal strength can suffer.

Top five new PC essentials

Quick fixes everyone should try

10 Ensure that you install a reliable anti-virus program and firewall (preferably a third party one rather than Windows Firewall) before you do anything online. ZoneLab's ZoneAlarm (www.zonelabs.com) and AVG Free Edition (free.grisoft.com) are free and very effective.

11 Get rid of bloatware – you won't be missing anything of value. You can safely delete ISP offers, media player demos and the like without harming your system.

12 Don't bother with the antivirus trials, they're always time limited and can be hard to uninstall. Delete or remove them via Add/Remove Programs before you install full versions.

13 Set a System Restore point before using Windows Update to download patches and fixes for your hardware and software.

14 Download and install a registry cleaner to keep Windows XP running smoothly. RegScrubXP (www.lexundesigns.com) is good, as is Advanced WindowsCare (www.iobit.com) and both are free for home users.



18 Zero configuration? We'll see about that

If your wi-fi adaptor seems to be working fine (the status LEDs are flashing away) but Windows is failing to connect to a network you know is there, it may well be an issue with the Wireless Zero Configuration service. Right-click on **My Computer** and select **Manage**. Expand the **Services and Applications** on the left and click on **Services**. Browse for the **Wireless Zero Configuration Service** and double-click on it. Under the **General** tab, click on **Stop**, wait a few seconds and then start it again. This will reset the wireless drivers in Windows XP and should enable you to connect.



19 Don't panic

Hearing an clicking noise from your PC?

Then what are you waiting for – back up, then remove your PC's case. Listen to where the clicks are coming from; even though the noise is a symptom of a failing hard drive, it could also be a defective case fan. Turn off and unplug each fan one by one, restarting each time to see if there's one that's worn out its bearings.

20 Sleepers

If you've got a persistent virus, Trojan or spyware that you keep disinfecting with your antivirus software, disable the **System Restore** function from **System Properties** and then run the scan. Bugs can hide from antivirus scanners in the compressed files used by **System Restore** and then later extract themselves to re-infect your PC.

22 Channel surfing

If your wi-fi network starts becoming unreliable, dropping connections and slowing down, check that you've not got a new neighbour who's also running a wi-fi network. If their network is running on the same channel it can easily interfere, especially if their router features a chipset made by a different manufacturer. Why not pop over, introduce yourself to your digital interloper and come to an agreement over who'll use which channel?

23 48 hours

A wise old soul once mentioned that it can take forever to figure out the cause of a problem but just two minutes to fix it. Truer words have never been spoken, so next time something goes Pete Tong with your PC, just think back to what you did in the last couple of days that might have caused it. Have you installed any new software or hardware? Did you run Windows Update last night, for instance?

24 No sex, please

Inherited an old PC overflowing with years of browsing detritus stuck in it? Install and run **Spybot Search & Destroy** (www.safer-networking.org) and **Ad-Aware** (www.lavasoft.com) to banish the diallers and spyware. Then disinfect with a reliable antivirus application, preferably running from a bootable CD-ROM so that Windows can be deep-cleaned.

25 MIA

Are your games crashing out when you try and play online? Have you noticed that the Error Reporting service also hangs? If so, some of Windows' system files may be missing. Dig out your Windows XP installation CD and stick it into your PC before opening the Run dialogue box, entering **sfc/scannow** and clicking **OK**. A file scanner will launch and will trawl Windows for missing or corrupted system files, lifting replacements off the CD. It can take around 10 to 15 minutes depending upon the damage it's got to repair, so go make a cup of tea in the meantime.

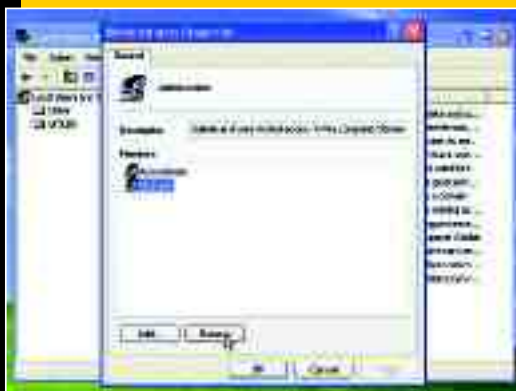
21 Become a power user

Get the most from the hidden might of XP with our guide

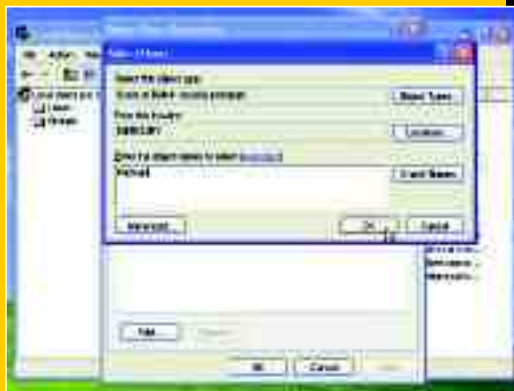
1 Avoid problems with Trojans before they arise by demoting your user account. You don't need to be an administrator to use your programs and PC, but Trojans do. So, in the Run dialog box enter **lusrmgr.msc** to open the Local Users and Groups utility.



2 Click on **Groups** in the left-hand pane and then double-click on **Administrators** on the right. Make sure you've got an account here for when you need it and then choose an account to demote. Select this account and click on **Remove**.



3 Then double-click on **Power Users** and click on the **Add** button. Type in your account name and click **OK** twice. If you ever need Administrator privileges to run a program (such as **lusrmgr.msc**), you don't have to bother logging out.



4 Just hold **[Shift]** and right-click on a program's executable file in Explorer or on its shortcut, choose **'Run as'** and select **'The following user'**. Enter the name and password of a User Account with Administrator privileges and click on **OK**.



"Bugs can hide inside System Restore and later re-infect your PC"



26 Troubleshooting sites

PC looking a bit peaky? Help can be found online...

www.cybertechhelp.com
www.avforums.com
www.practicallynetworked.com
www.tech-recipes.com
malektips.com

www.helponthe.net
www.wown.com
www.bootdisk.com
support.microsoft.com
forum.pcformat.co.uk



27 Taking out the Trash

Keep your system trim by dumping temporary files when Windows starts. Create a new text file on your desktop and enter `rd %temp% /s/q` on one line and `md %temp%` on the second. Save the file, rename it `cleantemp.bat`, hold down [Ctrl] and drag and drop it into the Startup folder, on the Windows Start menu.



28 AWOL optical drives

It's not unheard of for Windows to lose track of your PC's optical drives; even though it seems to know they're there somewhere (they'll show up in the Device Manager, for example), they don't appear in Explorer and won't play your CDs. The source of the problem lies in the Registry, so fire up RegEdit (Start→Run, enter `regedit`) and browse to `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E965-E325-11CE-BFC1-08002BE10318}`. Delete the `UpperFilters` and `LowerFilters` values and restart your PC. You may need to re-install your burning software, but it should restore your drives.



29 Matching set

An oldie but a goodie, this: don't mix and match your RAM modules so that they're different speeds. If you're installing DIMMs (even from the same manufacturer) that don't match, they'll default to the speed of the slowest module and, if you've got two or more DIMMs of a different speed, cause crashes under heavy workloads such as gaming. So, if you shell out extra for a PC3200 (RAM speed is rated by a PC number, the higher the faster), don't pair it with an old PC1600 DIMM.



31 Sending signals

Sending a video signal from your PC to your TV can result in a low-resolution image. There's very little you can do to avoid this because of the way that CRT screens create an image. The dot-pitch of a CRT monitor is 2.4mm; on a television set it can be twice that. You can make sure you're getting the best signal possible by dropping the desktop resolution, though, and using high-quality shielded S-Video or component cables. And keep the cables as short as possible to minimise degradation of the signal.



30 Get out of the kitchen

If unreadable or corrupted files start cropping up on your hard drive and Windows' Check Disk doesn't flag up any surface errors, run a utility such as Motherboard Monitor (get it at mbm.livewiredev.com) to keep an eye on the temperature inside your case. If the mercury starts passing the 40°C mark on a regular basis, you're setting yourself up for a hard drive failure, so improve the cooling.



★ 32 Streamlining

Keep your PC running smoothly

1 As friendly an animal Firefox is, it can sometimes run a touch tardily, so give it a speed boost by opening up a new tab and entering about:config and hitting [Enter]. Scroll down the list of settings to network.http.pipelining.



2 Change this entry's value to True by right-clicking on it and selecting Toggle. Do the same for the network.http.proxy.pipelining value. Then change network.http.pipelining.maxrequests from four to 20.



3 Finally, right-click anywhere in the window and create a new integer called nglayout.initialpaint.delay and set its value to zero. Pages will now load a great deal faster, especially over a broadband connection.



▶ 33 Lost XP passwords
Lost the passwords to the User Accounts on a Windows XP machine? Reboot it into Safe Mode (press [F8] before XP starts to load) and log on as the Administrator, an account which is normally hidden from view. This account needs to password in order to grant you access to the system. Open the Control Panel and reset the User Account passwords. This won't work, mind, if you set an Administrator password when you installed Windows XP and you can't remember that either...

☐ 34 Scan your drivers
The majority of BSOD (otherwise known as Blue Screens of Death) cases arise from dodgy drivers; knowing which ones are dodgy then becomes the relevant question. So answer it by opening the Run dialogue box and entering verifier.exe. This will launch the Windows Driver Verifier, which will scan your system's drivers the next time you reboot, and will then flag up any system stability issues.

☐ 35 Glitchy graphics?
If you're getting choppy video playback or random coloured lines appearing on-screen, check your graphics card driver for updates and make sure you're running the latest version of DirectX. Also try turning down your graphics card's video acceleration.

☐ 36 Advantage, Firefox
If you're fed up with Microsoft forcing you to use Internet Explorer any time you want something from its Download Centre due to the Windows Genuine Advantage ActiveX control, rejoice. There's a new plug-in for Firefox that'll take care of this for you and you can get it at www.tinyurl.com/82k34.

☐ 37 Top five .dll/driver sites
www.dll-downloads.com
www.driverguide.com
<http://developer.amd.com/drivers.aspx>
www.dll-files.com
www.nodevice.com **PCF**

★ 38 Sound advice from an industry expert

Get the best possible sound from your digital audio equipment



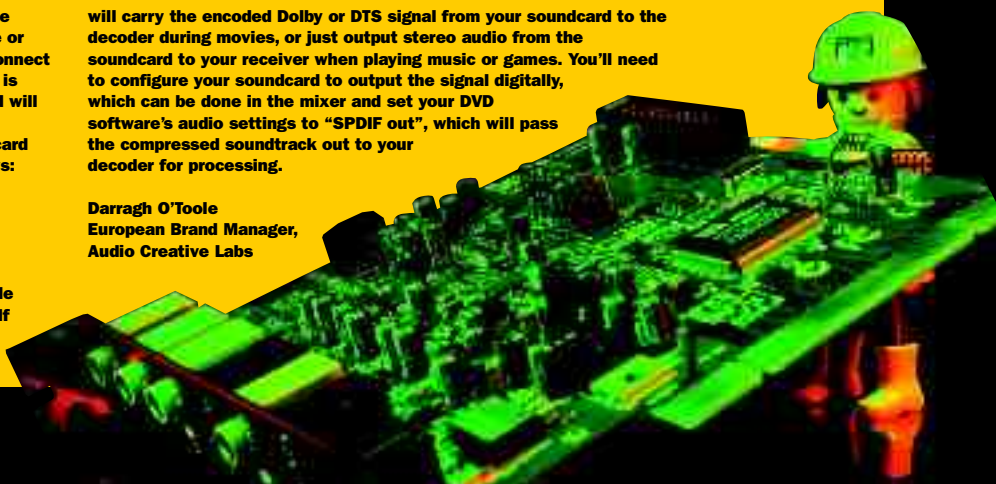
When connecting your soundcard to your home theatre amp or decoder you can use analogue or digital lines. When using analogue, you can connect to any of the inputs except for Phono, as this is designed to boost and EQ low-level inputs and will distort line level signals. For 5.1 amps, use 3 minijack to RCA cables to connect the soundcard to the inputs on the rear of the amp as follows:

Front Left/Right (white is left, red is right)
Rear Left/Right (white is left, red is right)
Centre/Sub (white is centre, red is sub)

For 6.1 and 7.1 amps, an additional channel/pair is added for side left/right which may be called surround left/right on your amp. If you want to use an external Dolby/DTS decoder you'll need to connect digitally, using either a coaxial or optical cable. This

will carry the encoded Dolby or DTS signal from your soundcard to the decoder during movies, or just output stereo audio from the soundcard to your receiver when playing music or games. You'll need to configure your soundcard to output the signal digitally, which can be done in the mixer and set your DVD software's audio settings to "SPDIF out", which will pass the compressed soundtrack out to your decoder for processing.

Darragh O'Toole
European Brand Manager,
Audio Creative Labs



Modern Apprenticeship

Now that the modding scene has grown up, isn't it about time it went out and got a job? James Carey plays Career Officer with some of the fresh-faced and wide-eyed graduates

A few years ago the members of the modding community were being hailed as the saviours of PC gaming. Fearing that the rot of big licence blockbusters and lazy, cross-platform development was diluting their hobby into a bland wasteland of sequels, cookie-cutter genre-moulds and film tie-ins, people were stepping-up to bring innovation back to game design. The leaps of imagination which characterised so much of our hobby's beginnings were being replaced by timid, conservative consumer habits, which big money publishing was only too happy to oblige. The old passion of the bedroom coder was making a comeback though, we

were reassured. Modders would be the ones who'd save gaming; they were carrying the torch.

A galvanised generation were industriously churning out mini-mods and full-on TCs, the legendary successes of *Counter-Strike* and later *Desert Combat* buoying the movement up and pushing modders to create bigger, better works until we were aiming for the stars on a *HL2* SDK-powered rocketship. But has the modding scene become a victim of its own success? The pressure is now on for modders to produce work that, far from being a playful exploration of ideas, are polished masterpieces in the traditional master/apprentice meaning of the word. The modding

scene is increasingly seen as a testing ground for new talent and developers are actively headhunting those with completed mods under their belts. Nearly half of the people who now work on games for Valve came from a modding background.

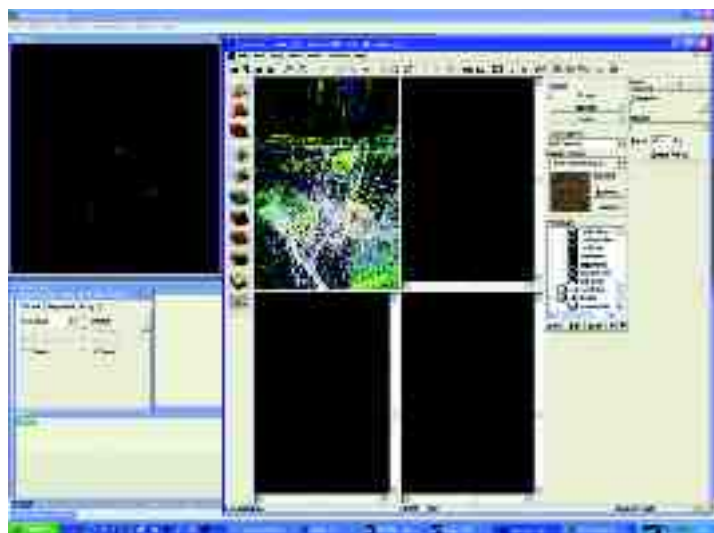
THE CLAW

Garry Newman, creator of one of the most successful and inventive mods for *HL2* (the less inventively-named *Garry's Mod*) shares some of these concerns. "I've been contacted by quite a few big name

Flashpoint persists thanks to modders.

great thing about *Counter-Strike* was that the development was like a shared community experience. New versions would be released every couple of months so it never got stale. This also allowed them to try things out, balance things."

Earl Laamanen is a modder-turned-developer for Bohemia



Modders now have better tools than ever before. The Software Development Kits released are often the same tools used to build the games in the first place.



"My advice to mod teams would be to work on shipping something fun as often as possible"

ERIK JOHNSON Project Manager at Valve Software

game companies based on *Gmod*." Garry muses, "I sometimes feel like the *HL2* modding community is like the grabber machine in *Toy Story*. All the modders are on the bottom begging to be chosen and every once in a while Valve grabs the handle and plucks one of them out." *PCFormat* asks if he thinks this 'talent breeding ground' ethic within the modding scene is a bad thing. "Development times for mods are getting silly," Garry agrees, "The

Interactive; a prime example of the modder-as-apprentice analogy. He shares some of Garry's concerns too. "It's always a shame when talented modders bite off more than they can chew." Earl explains. "If a team gets too big or gets too organised, it can start to be a bit too much like a job and you run the risk of burning out." His colleague at BI, Markus Kurzawa makes another point "I think it is more a problem of competition between

THE TOP 10 MODS

Non-Steam versions of which are available on our discs

1 COUNTER STRIKE 1.6 (Half-Life)

The definitive mod success-story. It's longevity and massive profile are deserved. What every modder wants their project to be, for better or worse...

2 TEAM FORTRESS CLASSIC (Half-Life)

Arguably the birth of games modding. With the class-driven play established, TFC was a huge influence on mods and games alike.

3 GARRY'S MOD (Half-Life 2)

One of the most inventive mods ever, it allows players to be endlessly creative. It's a mod for making mods, a metamod, if you will.

4 DESERT COMBAT (BF 1942)

Battlefield 1942's WWII military charm got updated to fit modern combat, eventually becoming more popular than the game itself. Frequent releases ensured success.

5 NATURAL SELECTION (Half-Life)

Atmospheric alien infested combat. Innovative RTS style play with a leader dishing out resources and organising grunts, prior to BF2.

6 PIRATES (BF 1942)

This mod swaps WWII for the creaking wooden ships and ball-and-shot pistols from the age of Caribbean piracy. You've not lived 'til you've keelhaunched an opponent.

7 SVEN CO-OP (Half-Life)

There's a thirst for co-op play in multiplayer land. Sven saw that gap and plugged it with Half-Life. The community that plays together, slays together, as they say.

8 DAY OF DEFEAT (Half-Life)

The other really popular team-based mod for Half-Life. It's followed a similar path of success and now enjoys a Source release alongside CS.

9 FINNISH DEFENCE FORCES (Operation Flashpoint)

OFP is buried under four years of almost daily addons, but FDF stands out as a full-on expansion pack that proves the game's versatility.

10 RED ORCHESTRA (UT2003/2004)

The WWII theme proved too tempting to ignore for one of Unreal Tournaments' most popular mods.



Garry's Mod has earned creator Garry Newman a massive reputation with both gamers and commercial development houses. It's a prime example of how frequent releases filled with experimental ideas can lead to success for a mod team.

mods. For those who want to be the definitive mod for that game it means that they need to beat everything that might come out, so the longer they wait and polish, they think, the more advantage they

render then die. That's just the nature of the beast. But there is anecdotal evidence that the mood has changed significantly for the bigger dev teams. The ones you'd actually expect to see something

the big mods are hoping to be CS on the first release. Which isn't going to happen. They really need to release a beta, even if it's [of poor quality], then use it as a base to build on. The first release will



"Mods are surely a great way to show your talent, especially since there aren't that many ways you could otherwise prove your skills as a game developer."

KEIJO "KEGETYS" RUOTSALAINEN. A modder almost deified by the OFP community.

have. Downside of that is that a lot of mods never release anything more than screenshots, before they shut down."

Of course there will always be mods that release one weapon

playable from. Garry Newman: "I've noticed on a lot of gamedev job pages it will say things like 'with at least one shipped title or one complete mod'. Complete being the important word. Right now a lot of

always be the hardest for a new modder. People will bitch that it isn't what you said it was going to be. But when you release the second update, people will start to realise that this will be a regular



These early shots of Counter-Strike demonstrate the massive changes applied to the mod over time. de_dust wasn't built in a day you know.



On June 18th 1999 Counter-Strike v1.0 arrived. You can see designers Jess Cliffe and Minh Le in the first map here. It was buggy and attracted little interest.

Mod 'n' job

thing and you'll get a lot more support and a bigger community." The mythology of CS hides the fact that it took time and a shed-load of 0.x releases to reach the heights it eventually did. *Desert Combat* is another example of a mod that released a beta early-on and then updated regularly, taking on board the comments and suggestions of the community. It too was a huge success, eventually dominating the servers to be played more than the already massively successful game it was based on.

SOURCE-ERER'S APPRENTICE

Perhaps the trouble is now that the scene has grown too large to support itself, become "like a mini game industry" as Garry Newman suggests, with everyone struggling to be the next blockbuster. Markus agrees, "Some [of the mod teams] just completely underestimate the



"There is nothing more rewarding than creating something nobody thought was possible"

MARKUS KURZAWA Designer at Bohemia Interactive

amount of time their grand plans require to accomplish."

Erik Johnson is Valve Software's Project Manager and, unsurprisingly considering Valve's history, a keen observer of modding trends. "Setting out with the intention of getting your game released and building your fanbase is a much more approachable problem than

trying to build a fully complete 'masterpiece' as a way to bolster your resume." Erik suggests,

"*Counter-Strike* was pretty rough when it was first released, but over years of development and iterations it was built into a successful product. Using *Counter-Strike* as an

example, it would not have arrived at the same point had it been developed internally for a number of years as is the case for large scale professional products. Instead, it released a number of versions over a few years, and used its community to help shape it into the game it has become." He then points out *Garry's Mod*, "The part about his mod that impresses me the most is the approach he's taking to evolving it over time. Its first release, nearly a year ago now, was fairly basic and centered around a small number of interactions that he wanted to pull off. He's now done nine major releases, and the feature set is immense and has a high level of polish. All mod teams should take a look at how he built up his community over time, and pay

attention specifically to how he iterated on his core ideas."

PLEASE RELEASE ME

So releasing often and having an active community who are directly involved with the process results in a tighter mod. In fact, Erik suggests, a better product than would have been possible had the mod/game been developed internally. Why then are mod teams increasingly reluctant to release until they have that unattainable perfect first release? Could it be that the modding scene has become, at least to some teams, more about potential employment than actually making mods? As the scene becomes increasingly industrialised the emphasis now is on producing 'professional' quality, release-candidate work rather than getting experimental builds out the door. That's not to say teams should be deliberately hasty and sloppy, but the aim shouldn't be to get everything done, then release. Erik agrees, "I think this is happening, and it is not a healthy trend. If there was a single bit of advice I could give to each mod team, it would be to work toward shipping something fun as often as possible as part of their development process." A sentiment echoed by nearly all the modders and devs we spoke to for this feature.

They all shared another belief too. Given that the grass is always greener on the other side it's perhaps predictable that the



We've come a long way. This is the latest version of *Counter-Strike* in all its Source-rendered glory. It's hard to believe that a small project started by two college students could develop into the single most popular online shooter of all time.



***Desert Combat* is another example of how a mod that released often earned a big following. Not every release was popular, similarly with *Counter-Strike*, but the development of both mods depended on community feedback, both good and bad.**

modders-turned-dev would miss their roots. But perhaps modders shouldn't be in such a rush to join the development workforce. They have an important role to fill. "There are a number of advantages that



"If a team gets too big, it can be a bit too much like a job, you run the risk of burning out"

EARL LAAMANEN Artist, Bohemia Interactive

mod teams have that professional studios generally don't get the opportunity to explore." Erik continues, "The price for failure in a mod is relatively small in comparison to failure on a large-scale professional product, which allows mod teams to take on much greater risks. By taking risks that professional developers can't afford to take, mod teams fill a void that no [professional] team can occupy." But it's not just the creative cause modders should be aware of, Markus laments some lost freedoms: "I was used to working very closely with one friend and we were just going wild with ideas. We tried to exploit every possible aspect of the given engine. There is nothing more rewarding than creating something nobody thought was possible before. It's pushing the limits together in a small team that I really miss, nowadays if I need to get around a limitation I just ask the programmers to change the code. The work is a bit different than I thought initially; it is a bit more industrial than creative." Perhaps modders should be careful what they wish for.

UNIQUE, C'EST CHIC

So a healthy modding community that dares to release experimental work is a necessity. If the ratio of modders-turned-dev at Valve is anything to go by, that 'talent breeding ground' attitude is also essential, for filling the ranks of future development studios. But despite the growing trend of modders waiting interminable periods before releasing a build, ironically it's exactly those mods that do release early and often that end up grabbing the attention of developers, as with *Garry's Mod*. "I think one of the big advantages of making a mod is that you don't have to worry that it isn't going to sell, so you can deviate from the mainstream and be innovative.

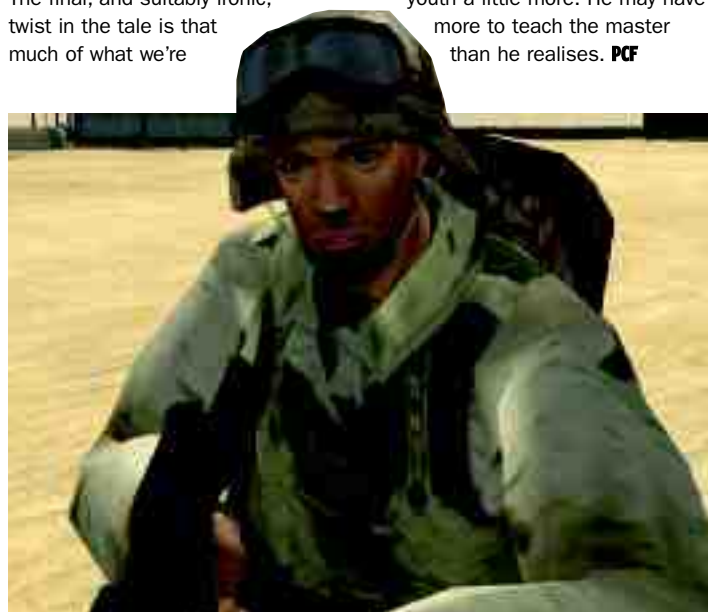
Examples of this would be *Natural Selection*, *The Ship*, *Dystopia* and *The Hidden*. I'm so tired of *Counter-Strike* clones." He says, "You just need to remember that you're not going to get noticed by being the

same." "Simply put," Erik concurs, "If you build a game that a lot of people are having fun playing, game studios will be trying to hire you."

THE NEXT EPISODE

The final, and suitably ironic, twist in the tale is that much of what we're

starting to see less of in the modding scene, namely experimentation and small, frequent releases, are exactly what cutting-edge development studios are now trying to emulate in the industry. "A lot of how we're building games at Valve currently is an extension of the approach that successful mod teams have employed." Says Erik, "Instead of going off and spending another five years working on our next game, we're going to deliver our game experiences in smaller pieces episodically. Like mod teams, this allows us to spend most of the time on iteration and polish, rather than years worth of technology development." It seems that perhaps the apprentice should stop to enjoy his wild, experimental youth a little more. He may have more to teach the master than he realises. **PCF**



The quality of *Desert Combat*'s character and vehicle models easily stood up to the standards of *Battlefield 1942* developer DICE's original content.



Coupled with powerful development tools, companies are increasingly supportive of their modding communities. Here, the talent on offer can be closely observed.

MODDERS-TURNED-DEV

Where are they now, and how did they get there then?

>> MINH LE & JESS CLIFFE While studying at Simon Fraser University these two undergraduates began working on the game that was to become *Counter-Strike*. Minh Le had done some modding work on *Action Quake 2* beforehand but it was CS that earned him the widespread recognition. By the time CS was in Beta 7 in August 2000 Valve had picked the mod up and were actively contributing content. Minh and Cliffe were soon hired by Valve, the latter still working on *Half-Life 2* content to date.

>> FRANK DELISE Creator of the most successful mod for *BF1942*, *Desert Combat*, Delise won several Best New Mod awards in 2002 for the exceptional modern combat facelift that he and his team brought to the game. In 2003 he founded Trauma Studios to reflect the growing workforce and organisation of the project. By September 2004 Trauma Studios had been acquired by *Battlefield* developers Digital Illusions where he worked on development with the BF2 engine. Nine months later DICE closed Trauma Studios down in New York offering the staff based there other positions in DICE's native Stockholm.

>> MARKUS KURZAWA & EARL LAAMANEN Both men were high-profile modders in the *OPF* community before being taken on by Bohemia Interactive. Earl working on many small projects including the widely utilised 'Suchey and Earl's Marine Pack' and Markus as part of the DKM Mod team, a massively popular mod in the community. While Markus is now in-house for BIS, Earl works for the company from his home in Canada. Another example of how modding has changed development practice.



Trauma Studios, a mod team, was bought by DICE, then shut down.

Dream Machines

One day we'll all have a supercomputer at home, but until then you'll just have to dream. **Alex Cox** collapses in wonderment in front of the world's fastest PCs

Computing is reverting to type. The warm, electronics-filled rooms of days gone by are steadfastly refusing to lay down and die. Off-the-shelf components are being networked en masse for

parallel processing power, replacing the traditional vector processors. The most popular choice remains the Pentium 2, thanks to its combination of cool running, diminutive size and price. It's

important to note, though, that these beasts aren't measured in 3DMarks or frames per second, but in flops – floating point operations per second. These days, the average desktop PC manages a few

gigaflops without much difficulty, but a modern supercomputer is measured in teraflops – one of which is 1,000 gigaflops. So without further ado, check out these big fish...

Computer Europa

Name MareNostrum

Whereabouts The Madrid Supercomputer Centre, Spain

Owner IBM/Spanish Government

Cost Unknown

Web www.bsc.es

Processors 4,564

Processor type PowerPC 970

Size 160m²

RAM 9 TB

Peak Speed 42 teraflops

Power Consumption Unknown

Despite a boost from Switzerland's swelling supercomputer population, Europe is lagging behind in the top 500. As much as we hate to admit it, there's a measly one European supercomputer in the world's top 10. This would be a real disappointment if we didn't have the most striking machine of them all. Instead of some low-ceilinged office building, the Madrid Supercomputer Centre stores its 4,564 CPU machine within what looks like some kind of hermetically sealed jail, housed in a tremendous arched hallway. It's like something Blofeld would attempt to trap James Bond inside, but only if the supervillain didn't mind having his delicate calculations messed with.


IBM supercomputer MareNostrum is currently engrossed in various extremely

important and frighteningly complex life sciences applications, like the daunting task of unravelling the entire human genome, and is one of the few amongst the world's finest supercomputers. It's also accessible by the worldwide scientific community via the internet.



Picture Barcelona Supercomputer Centre



**"The Madrid
Supercomputer Centre
looks like something
Blofeld would attempt to
trap James Bond inside"** 

The Blue Dream

Name Blue Gene/L

Whereabouts Lawrence Livermore National Laboratory, California

Owner US Department of Energy/IBM

Cost \$100 million

Web www.llnl.gov/asci/platforms/bluegene1

Processors 131,072

Processor type PowerPC 440

Size 2,500 square feet

RAM 32,000GB (approx)

Peak speed 360 teraflops

Power consumption 1.5 megawatts

Scalable architecture is a most irritatingly elitist thing. The more money you have, the more powerful a supercomputer you can create. Need more power? Simply get your wallet out, buy another box of processors, painstakingly wire them up to your ingeniously designed and absurdly powerful I/O system, and sit back and admire your newfound teraflops. If you happen to have the money and legitimate scientific status that the Lawrence Livermore National Laboratory (LLNL) has, you could

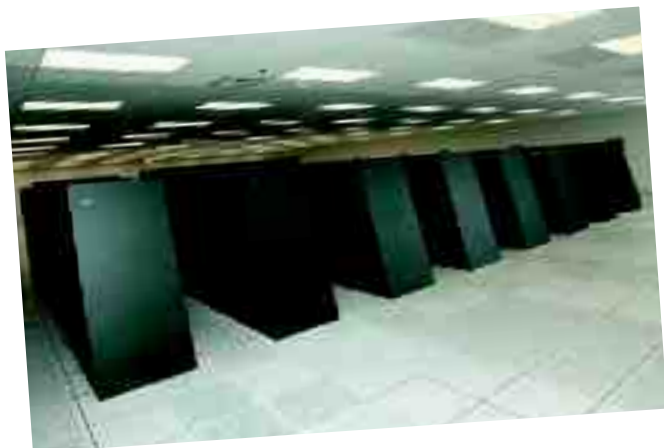
even work with IBM to create enough nodes to build the most powerful computer in the world.

Don't let the name fool you – this isn't Deep Blue, nor even one of its direct descendents. Deep Blue was a chess computer, and wasn't even one of the most powerful computers of its time. Its power came from its design, which prevented it from doing anything other than chess computations. In that respect, and a few others, this is similar. Its specialised circuits are configured to run nothing but molecular dynamics applications, and Blue Gene/L is currently being prepped for top secret operations. We can't say much, but the US Department of Energy, the project's owner, seems to be muttering something under its breath.

A total of 131,072 PowerPC 440 processors – two per node – make up the massive cluster of hardware in LLNL's Terascale Simulation Facility. These are

significantly less complicated processors than Pentiums – they use the Reduced Instruction Set (RISC as opposed to x86's CISC), and are off-the-shelf, unmodified processors, connected to a bespoke circuit board. To make Blue Gene/L run a different program you'd have to swap all 6,5536 of its 'compute' boards at a cost of around \$100 million, then reprogram its 1,024 Linux-toting I/O nodes. Well go on then. Make it play *Quake IV*. If the current Linpack-rated speed – a frankly ridiculous 280.6 teraflops – doesn't quite get you the framerate you're after, you might even try to overclock it. The theoretical maximum speed of the architecture is 360 teraflops. Considering that no other machine has ever officially topped 100 teraflops, that's quite something.

LLNL isn't alone in its ownership of a Blue Gene/L. Five of the top 20 supercomputers are currently based on the architecture. IBM's smaller server installation in New York can only manage a comparatively tiny yet still unimaginably fast 91.20 teraflops, while more scattered IBM installations boast smaller setups. Blue Gene/L is not the end of the line, either. Blue Genes C, P and Q are due in the next few years, hoping to raise the bar past teraflops and into petaflop performance.



A big freeze

How low can your temperature go?

The key to making an absurdly fast computer is duplication – the more processors you cram in there, the faster it will run. If we take away the option to add more processors, the only option is to make the CPU you have run faster, just like a home PC. This means more cooling is required. Given low enough temperatures, quite preposterous results are possible.

The Prescott 2M, for example, runs at 3.8GHz. Given a large tub of liquid nitrogen, a dollop of ingenuity and a disregard for what the manufacturer might recommend, Japanese overclocker Memesama has managed to squeeze a remarkable 7.1GHz out of the chip. He even managed to boot Windows. Even with a coolant at -200°C, this sort of power isn't stable – the nitrogen evaporates quickly, and the voltage required is nearly double what the processor would normally need – so the experiment didn't last long. It just had time to beat the world single processor Pi calculation record, with one million places calculated within 18.516 seconds.



**Memesama's
nitrogen-cooled
Prescott 2M.**



Purple Power

Name ASC Purple

Whereabouts Lawrence Livermore National Laboratory

Owner US Department of Energy/ASC/IBM

Cost \$230 million

Web www.llnl.gov/ascii/platforms/purple

Processors 12,288

Processor type IBM Power5

Size 2,500 square feet

RAM 50 TB (approx)

Peak speed 93.4 teraflops

Power consumption 7.5 megawatts

The prize of third fastest supercomputer in the world goes, much like first and second, to an IBM machine, once again housed in the hallowed walls of LLNL. Purple eschews Blue Gene technology for an eServer architecture, but since it runs Linux it has the potential to be put to a variety of uses. It's arguably more powerful, as it squeezes out a much more efficient ratio of power to processors than either of its superiors. Purple is the fifth generation of supercomputers involved in the Advanced Simulation and Computing program, which has been focused on modelling weapons and explosion characteristics. Thank Purple, for example, for the fact that the US isn't flinging its nuclear weapons at rival nations in order to test them.



Picture LLNL

Eastern Eye

Name Earth Simulator

Whereabouts Yokohama, Japan

Owner JAMSTEC

Cost 7.2 billion Yen

Web www.es.jamstec.go.jp

Processors 5,120

Processor type NEC SX-6

Size ~1280 sq m

RAM 10 TB

Peak speed ~36 teraflops

Power consumption 6400 KVA

Back in 2002, Earth Simulator emerged from Japan, taking the supercomputing world by surprise and snatching the number one slot, which it held until 2004. While it couldn't cling on to the all-important computation speed accolade for long, NEC's machine still holds the title of the world's fastest vector processor-based computer.

Earth Simulator is put to work generating theoretical models of the sea and the atmosphere, or at least attempting to. It's not always easy to predict chaos, no matter how many processors you're hoarding, so ES has its work cut out.

The HAL-like machine, which looks like it should be floating menacingly in space, is also the world's most earthquake-proof PC. Its home, the Earth Simulator Centre, is built onto a set of custom rubber supports designed to withstand even the fiercest seismic stress. It also sits beneath a Faraday cage-style nest of wire designed to deflect lightning strikes, and even has its halogen lighting transplanted outside the server room to prevent any electro-magnetic interference. Appropriately for a supercomputer based just 200 miles from Kyoto, many of its current tasks involve predicting future climate change.



Picture Earth Simulator Centre

Shuttle PC

Name Columbia

Whereabouts Mountain View, California

Owner NASA

Cost \$200 million (estimated)

Web www.nas.nasa.gov/About/Projects/Columbia/columbia.html

Processors 10,240

Processor type Intel Itanium 2

Size 1,000m²

RAM 20TB

Peak Speed 60 teraflops

NASA's heaviest hitter is the Columbia supercomputer, named in honour of the ill-fated crew of the space shuttle disaster. The gaudily decorated clusters have been manufactured by noted purveyor of high-spec equipment Silicon Graphics, Inc. SGI brings its experience in high-performance graphics rendering (it was responsible for the dinosaurs in *Jurassic Park*, among other projects) to the 20 Altix superclusters which make up this big room of Itanium processors. Far more versatile than Blue Gene, Columbia runs a specialised version of Linux, and is put to use by scientists at NASA for a vast array of applications. As with many other supercomputers, Columbia simulates safety tests on what would otherwise be expensive or dangerous equipment.



Picture Silicon Graphics, Inc.

Rouge Rage

Name ASCI Red

Whereabouts Albuquerque, New Mexico

Owner US Department of Energy

Cost Unknown

Web www.sandia.gov

Processors 9,298

Processor type Pentium 2

RAM 1,212GB

Peak speed Two teraflops

Power consumption Unknown



Red was the first product of the Advanced Strategic Computing Initiative, which reasoned that it needed 100 teraflops supercomputers and couldn't wait for industry to get around to building these machines. It never got anywhere close to that – this was the mid 1990s – but it's still one of the

most important computers ever. To give you some idea of its abilities, it was the fastest machine in the world in 1997, when it became the first supercomputer to surpass one teraflop. Eight years down the line Red is still in use, having been upgraded from Pentium Pro chips to Pentium II Overdrive. Red is unique because of its creative use of twin operating systems – UNIX on the front end, and Intel's lightweight Cougar OS for the actual computing tasks. This approach keep things nice and simple, even though it might not seem like it. Red's home of Sandia National Laboratory is host to a number of other heavily classified supercomputers including Thunderbird and Red Storm, two of the world's top 10.

They're all around us

There are 30 supercomputers in your home, you know

The manufacturers of yesteryear couldn't possibly have predicted the speeds of today's machines. Seymour Cray, when working for a rudimentary computer company named CDC, certainly couldn't, but he had a fair idea of what constituted a powerful machine at the time. After leaving CDC to start his own company, he produced the Cray 1, generally acknowledged as the world's first supercomputer. Released in 1976 and sold for \$9 million (including \$1 million for the discs), the Cray 1 sold much better than expected, shifting 80 units. Coupled with the 'freon' refrigeration system, the whole unit weighed over five tons, and ran at around 136 megaflops.

Compare this to a bog-standard desktop PC of today. The whole thing should cost you around £1,100, and you won't be charged a million dollars for a copy of Windows. It doesn't have integrated seating, unlike the Cray, but efficiency is such that it can be cooled by a selection of little fans instead of a network of copper pipes. And the performance? A 2GHz P4 produces about 4,400 megaflops a second – 4.4 gigaflops – equivalent to over 30 of Seymour's machines.



The Cray 1, crazily fast in 1976 – is now topped by most desktop machines.

Hot SX

Name NEC SX-8

Whereabouts Exeter

Owner The Met Office

Cost ~£27.5 million

Web www.met-office.gov.uk

Processors 128

Processor type NEC SX-8

RAM 1,212GB

Peak speed Two teraflops

Power consumption Unknown

Unfortunately the Met Office's tasteful cluster is not the fastest in the UK – that honour goes to an IBM eServer put to similar use by the European Centre for Medium Range Weather Forecasts. We're with the Met's effort though. Its Exeter data centre currently plays host to the first ever NEC SX-8 to be put into operation, which has been seeing exceptional performance and has pepped up its ailing (and tastefully decorated) SX-6 machine. The demand the Met is putting on it meant it had to pass a stringent test before getting the gig – 28 days uptime in a 56 day period. For a big hot bundle of precision electronics, that's not bad going. "The new system is geared to provide what our customers want: more accuracy, more detail and a quantification of risk, with a particular emphasis on high impact weather," said Steve Noyes, Chief Technology Officer at the Met Office. Here's hoping the next generation of supercomputers figures out a way to stop high impact weather, not just predict it.

King of Search

Name Google Cluster

Whereabouts Various locations

Owner Google

Cost c.\$250 million

Web www.google.com

Processors 6,000

Processor type Intel Xeon

Size Unknown

RAM 16,000GB

Peak Speed 120 teraflops

Power consumption Unknown

Google is the unlikely owner of a machine (of sorts) that boasts a combined power in the range of 120 teraflops. Its massive worldwide server farm is thought to contain around \$250 million worth of equipment, spread over several sites. Google has not released clear information on numbers or locations. It's not quite so cagey about the hardware, though little information has surfaced for a while. We do know that rows of racks make up the bulk of it, containing 88 machines apiece. Each PC, a dual-CPU 2GHz Intel Xeon, contains 2GB RAM and a further 80GB hard drive, and a rack cost around \$278,000 in 2003.



The Educator

Name HPCx

Whereabouts Daresbury, UK

Owner University of Edinburgh

Cost £53 million

Web www.hpcx.ac.uk

Processors 1,600

Processor type IBM Power 4

Size Unknown

RAM 1.2 TB

Peak speed 10 teraflops

Power consumption Unknown

What if a machine could solve all the maths problems given to secondary school pupils over a whole year? Perhaps they could do something useful in class instead? HPCx, the pride and joy of the UK scientific community, could work them all out in a fifth of a second, and still have time for some extra-curricular long division. The 50-node device has had its top speed upped from five teraflops to 10. A further upgrade is set to double this figure later in 2006. It is being used for all manner of diverse purposes: drug design at a molecular level; investigating the structure and behaviour of the Earth's core; and even flight simulation, investigating turbulence and wind resistance. We doubt it's a simulation that's high on playability, though.



Real Alienware

Name SETI@home

Whereabouts Everywhere

Owner University of California

Cost Unknown

Web setiathome.ssl.berkeley.edu

Processors Five million

Processor type Various

Size Worldwide

RAM Unknown

Peak speed ~100 teraflops

Power consumption Unknown

Parallel computing, where you fill a big room with processors and have them calculate in tandem, is the architecture behind the bulk of today's supercomputers. The entirely scattered approach of the University of California Berkeley's SETI@home is something else altogether. It analyses, in a distributed manner, an incredible amount of radio wave data – reams and reams, recorded by the Arecibo radio telescope in Puerto Rico, of the skies of the northern hemisphere. By harvesting the unused CPU cycles of participating home computers, the project has already set the record for the world's longest computation, with 10 to the power of 21 floating point calculations performed over its two million years of aggregate computing time. It doesn't tend to have much downtime, on account of there being no single point of failure in the whole grid.

No extra terrestrial life has been found yet, possibly because there are currently no results from the Southern hemisphere being analysed – negotiations are ongoing to add data from Australia's Parkes Observatory. Since it began life in 1999, SETI@home has struggled to find funding. The server hardware and dedicated team at Berkeley was nearly shut down in 2002 after a funding crisis, but at least there's no mammoth processor bill to think of. SETI@home is not alone in distributed supercomputing either, and is now part of the BOINC network (www.boinc.berkeley.edu). **PCF**

"The world's first supercomputer, the Cray 1, sold for \$9 million, and the discs were \$1 million each"



In DRM we trust

Digital rights management could lead to bliss or total chaos.

Paul Hudson presents the cases for and against copy protection

Who owns your CDs, DVDs and games? It ain't you, buster - you just have a license to play them to play. That's the way the entertainment industry sees it, at any rate, hence the ever more stentorian and intrusive copy protection measures blighting our

entertainment. But with DRM backfiring disastrously on Sony (see p.12), perhaps it's not too late for the world to revert to caring sharing.

What's the current state of Digital Rights Management?
Well, many products have DRM

hidden away inside them, but legitimate users often don't notice the features are there. Sometimes the DRM is more obvious, such as in products like Napster - while you subscribe to Napster, you can listen to all the music you want, but as soon as your subscription lapses,

the music you downloaded automatically times out and becomes unplayable until you renew.

How does it work?

The majority of rights management works by "calling home" - sending a signal to a server to question



DRM HEAVEN

In a rights management utopia, everything would be locked down, but it would also mean that all sorts of content could be downloaded legitimately from the web and onto your computer, your PDA, your mobile phone or your iPod. You would be able to choose to pay monthly, or to buy individual tracks or movies. You could transfer or sell any licences you had, and be able to choose the programs you used to play back your media.

Some companies – notably those related to the PC industry, such as Intel, Microsoft and HP – are keen to keep the DRM debate in the balance between consumers and media companies,

particularly as it encourages people to watch their movies on their computers. It's currently not legal to rip music or movies to your PC, and only properly licensed DRM could bring that about. Clearly a huge potential win for DRM.

One area where Digital Rights Management is already being used for the common good is in the BBC's interactive media player (IMP). This is being beta-tested right now, but the idea is to offer BBC content as it gets aired on TV, free of charge, and stored on your machine for playback when you want it. You can even transfer the data to a mobile device for viewing on the move, with the only downside being that the content expires after seven days.

Is DRM divine or demonic? It all depends on the Trusted Computing Platform Alliance.



DRM HELL

Self-destructing DVDs, adverts you can't skip, and PCs that monitor what you do with your content. Sound like tinfoil hat-inspired madness? Actually, it's all either here now or coming soon.

Industry wide consortiums such as the Trusted Computing Platform Alliance (TCPA) have the potential to provide the biggest danger to computing we've ever seen: inescapable lockdown of the entire hardware and software stack. The TCPA includes Microsoft, AMD, Intel, HP, IBM, ATI, Dell, Maxtor, NVIDIA, Nokia, Symantec, Vodafone, and dozens more. If the trusted computing platform comes to life in Windows Vista – as is planned – these companies will have the final say about what you can run on your computer.

DRM has already been abused in various ways. Lewis Carroll's *Alice in Wonderland* – a book that has been in the public domain for years – was released as an e-book by Adobe, and used DRM controls to stop people reading the book

aloud. Other companies are abusing copy-protection routines by placing commercials in the User Operation Prohibited zones of DVDs. This space, designed to display the usual FBI warning about not copying discs, has been used to place unskippable commercials in *Monsters, Inc.*, *The Sixth Sense*, *The Shawshank Redemption*, and many more like them.

Furthermore, confusion reigns supreme in a DRM world with no standardisation. If you want to play your Apple-licensed AAC content, you need to use *QuickTime* or *iTunes*. To play your Microsoft-licensed WMA content, you need to use *Windows Media Player*. To use your Sony-licensed ATRAC content you need to download *SonicStage CONNECT*. Do you see the problem yet? Napster has its own client, as does Virgin and HMV, and indeed so does everyone and their dog it seems.

Fragmentation is everywhere as companies try to lock users in to their business models, which leads to a dark future for PC users if DRM continues along the same path.

whether your computer is allowed to use a file or not. It might send a special identification string that uniquely represents your computer, it might be a CD key or product ID, or it might be a username and password for your account. Another form of digital rights management is to save a play count directly into each file; each time you play it back, the play count is decreased until eventually it can't be used and you must download it again.

Is it just multimedia that has rights management?

Modern computer games are becoming increasingly rights-managed too. Steam – the server system responsible for distributing

Half-Life 2 and other Valve games over the internet – is designed to match users to their copies of the games so that Valve can track usage and, ultimately, cut down on software piracy. You may be surprised to hear that even

forwarded by email unless you have the right permissions.

Could Outlook or Thunderbird forward those messages?

No: DRM uses strong file encryption. What's more, Microsoft

"As soon as your subscription lapses, the music you downloaded times out and becomes unplayable"

Microsoft Office now has digital rights management built into it too, which has been designed so that personal or sensitive documents can't be read, copied, or even

is working through the Trusted Computing Platform Alliance (TCPA) to build rights management into every area of your machine, so that your CPU, motherboard and

operating system will be hard coded to ensure that any associated rights were preserved.

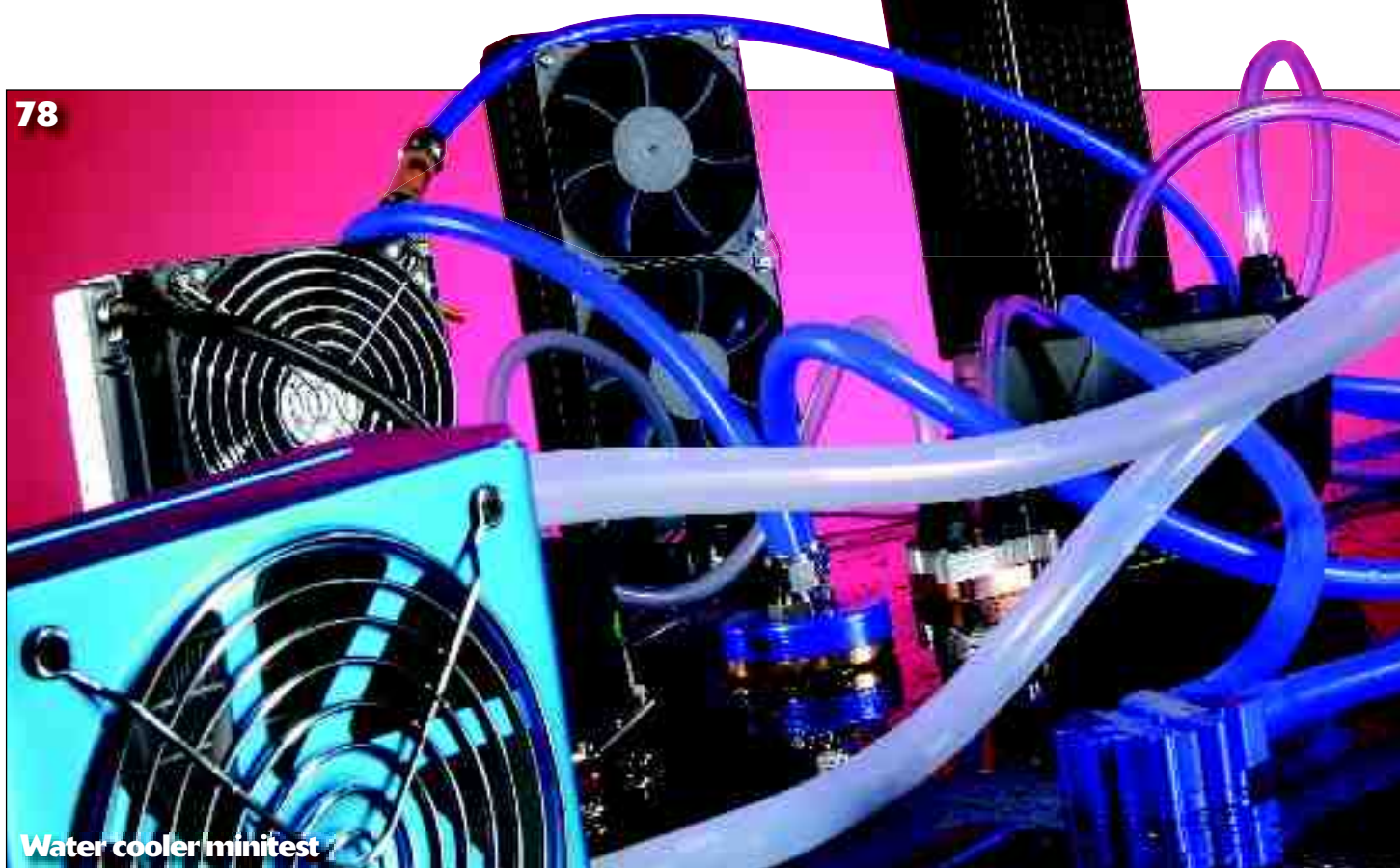
How much digital rights management is there outside of desktop computers?

The console industry has had basic DRM for some time, in the form of region encoding for games. That spread to DVDs, and current plans for the next generation of DVDs have rights management built into their code. At this time, HD-DVD is the more consumer-friendly of the two alternatives, as it allows "managed copy" – a rights-managed personal rip of the disc to your computer that you'll be able to stream to other PCs. **PCF**

reviews

All the latest games, gear and apps

78



Water cooler minitest

Our scoring system

0-19% Unusable or astoundingly rubbish

20-49% Largely not worth spending money on

50-69% Some decent features but uninspiring

70-79% Accomplished without the must-have factor

80-89% Outstanding. Awarded Top Gear or High Score

90+ Exceptional. A PCFormat Gold Award winner

Our key promises

1. PCF has the most thorough reviews

We've been reviewing kit and games for 14 years. With over 8,500 reviews written, we have the most talented, dedicated and authoritative teams in the business.

2. Integrity is paramount

We never trade pages for exclusives, or review games not signed off as finished by the publisher. Where we've looked at reference hardware, we'll make that clear in the review.

3. The PCFormat Gold Award

Only when a piece of equipment or game exceeds our expectations in terms of innovation, excellence and value for money does it get one of these coveted honours.

4. High Score/Top Gear

It's a misconception that only 90%+ is an essential purchase. Anything scoring 80% or higher is festooned with one of these, making it one of the month's most highly recommended.

5. We want to know what you think

We are PC fans writing for PC fans, so please share your thoughts on new stuff in our forum: <http://forum.pcformat.co.uk>



73

Rock Direct
Xtreme CT

PCFormat Experts

**JEREMY LAIRD**

Mad scientist Laird thought it might be fun to bring together SLI and CrossFire on p62, and see who's best. Careful, man!

MOST WANTED
An R580

**MIKE CHANNELL**

Editorial Assistant Mike demonstrates his flair with a CV by guiding you through *Resume Builder* over on p120.

MOST WANTED
TOCA Race Driver 3

**RICHARD COBBETT**

With Richard's help, your blog will be transformed into a beautiful vision of how all websites should be. Maybe.

MOST WANTED
RSS feeds

**AL BICKHAM**

Our industrious kit-herder has had a busy month, working tirelessly to stuff these very pages with great gizmos.

MOST WANTED
An Xbox 360

**JOHN WALKER**

John's spent his month exposing wrong-doing and malpractice among music corporations. He's our hero!

MOST WANTED
Malware-free CDs

**DAVE JAMES**

New PCF recruit Dave spent most of the month jangling his spurs over lawless Wild West FPS romp *Gun*. Yee-ha!

MOST WANTED
More bullets

SUBSCRIBE NOW!
Get the best reviews first, every month!
See p152



THIS MONTH



66 >> PMP ROUND-UP The hottest mobile toys

Feeling a bit left behind in the technological stakes with your dreary old mono MP3 player? Get with the times and sort yourself out with a portable media player, then. With our tasty roundup you'll be watching yesterday's episode of *Neighbours* on the bus no time. Perfect for clandestine daytime TV viewing at work, we're told.



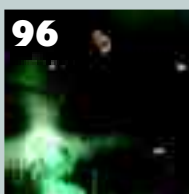
77 >> DVB2GO XL Digital TV on your laptop

It's a pain when you head off on holiday and can't tune in to favourite digital TV stations, like the Pike Fishing Channel or Jamie Oliver Max. Gainward may have the solution with its USB powered digital antennae, though. Pausing live TV and automatically recording shows is one thing, but can it save you from the horror of reality TV?



84 >> LINUX FOR YOU Is Microsoft scared yet?

Most of us have fantasised about ditching Windows at one point or another, usually after a report on Bill Gates' personal fortune or a particularly spectacular system crash. Many PC heads are now making the switch to Linux, either for ethical reasons or just because they are more secure. Paul Hudson takes a flight into the shadowy world of operating systems



96 >> PATH OF NEO The Matrix rehashed

Who wouldn't want to be the strangely larch-like Keanu Reeves? Unfortunately there's no *Path of Bill and Ted* so you'll have to make do with Shiny Entertainment's *Path of Neo* instead. Combining all the elements of the trilogy that made it such a big hit, you can take the entire journey yourself, but do you really want to?

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HOME DREAM MACHINE

CrossFire X1800 XT vs SLI 7800 GTX 512MB

The two fastest PC graphics solutions in the world meet head to head in the heavyweight graphics fight to be at the heart of the dream PC. No punching below the belt boys, says Jeremy Laird

Price £800 minimum (one slave and one master card) **Manufacturer** ATI **Web** www.ati.com

Price £920 minimum (for two cards) **Manufacturer** NVIDIA **Web** www.nvidia.com

Two connected video cards. Double the 3D rendering performance. That's the dead simple idea behind both SLI from NVIDIA and ATI's competing CrossFire technology. Simple indeed, and not actually new idea. Travel back to the dark ages – that'll be the mid 1990s – and the now-defunct 3dfx was touting an eerily familiar dual-card graphics solution. It even shared its SLI moniker with NVIDIA's current technology.

But if the concept is straight forward, the practical reality of convincing two video cards to play nicely is anything but. In fact, it's damned difficult. Which explains why SLI is the only product launch NVIDIA has fumbled in the past 18 months and why ATI's much-delayed CrossFire is fast approaching joke status among the PC cognoscenti.

In fact, we at PCF wonder whether CrossFire and SLI are worth the effort. The bang-for-buck merit of even a single high-end graphics card is marginal at the best of times, not least because most games developers aim their output squarely at the capabilities

of average-Joe PCs, not bleeding-edge uber-boxes. So, the cost of a pair of flagship 3D boards is hard to justify. Likewise, the numbers never seem to add up in favour of a dual-card solution when comparing, for instance, two mid-range cards against a single, more expensive, board. Especially when you factor in the investment required in associated components such as motherboards and PSUs. We're also irked by the lack of cross-compatibility with current dual-card solutions. The PC is all about open standards, not proprietary technology, but currently you can't mix a pair of NVIDIA video cards with an ATI motherboard, and vice versa (more on that in a moment).

GENERATION GAMES

SLI is into its second generation and selling by the spadeful. Meanwhile, CrossFire is finally becoming available. Dual-card PC graphics, it seems, is here to stay. What's more, both ATI and NVIDIA have recently launched new dual-rendering compatible high end video boards. And that means it's time for the ultimate showdown: two of NVIDIA's finest versus a pair of ATI's most wanted. So, it's not just bragging rights for the most effective dual-card platform that's up for grabs. The prize at stake is nothing less than the title of the undisputed world's fastest graphics solution, the dream machine for the home. And that includes any upcoming game console you can think of. A single GeForce 7800GTX 512MB or Radeon X1800XT is capable of slapping both the Xbox 360 and Sony PS3 around with a big stick. A pair of either will literally do bloody murder upon those 'next-gen' consoles.

In theory, SLI and CrossFire are peas in a pod. Both allow a pair of PCI Express graphics cards to team up, with one card acting as a slave and sending its rendering output to the master card, which composites that data with its own and spits out the

HOW WE TESTED

The ultimate performance test

Framerates in many games are often CPU limited on high-end graphics platforms, even at extremely demanding settings. With that in mind, we tested at a minimum resolution of 1,600x1,200 (we also ran an 800x600 baseline number in order to discover where the CPU limitation lies in each benchmark) and where possible at 1,920x1,200, with both anti-aliasing and anisotropic filtering enabled. We also

concentrated on the latest, most advanced games such as *Call of Duty 2*, *HL2: Lost Coast* and *F.E.A.R.* However, as PCF discovered a few months ago, ATI currently has a driver glitch with *F.E.A.R.* which degrades performance. Renaming the *fear.exe* file solves this for a single ATI card. But in CrossFire mode, this prevents the driver from recognising the game and the driver profile from selecting the optimum dual-card rendering mode.



final image. But in the silicon, there are some crucial differences. And pretty much all of them are a result of NVIDIA's first-mover advantage. On an engineering level, it means SLI is more considered, it's neater and it's better integrated into NVIDIA's product line-up. Whatever ATI may bleat about having offered multi-rendering technology for industrial-scale rigs since the Radeon 9700, the fact is that the release of CrossFire is a reaction to SLI, plain and simple.

Unfortunately for ATI, that's not something that a revised CrossFire platform with the Radeon X1800XT changes. From initial design to retail availability, it takes several years to prepare a new GPU. NVIDIA went public with SLI in June 2004, long after the feature set for the X1800 GPU, as well

"Current CPUs simply can't keep up with the power of a pair of high-end graphics cards"

as the rest of the new X1000 family of graphics chips, was set in stone. CrossFire, therefore, was born too late to be integrated into the X1000 series.

And that means the clunky combo of a compositing chip and DVI dongle cable, as used with Radeon X800 and X850 CrossFire, remains. So, once again, CrossFire for X1000 family cards requires a unique master video board with a special input socket and compositing chip which receives the DVI output from the second, standard card. In the first-generation of CrossFire, this setup generated an embarrassing problem for ATI. Because of the single-link specification of the DVI ports on the X800 and X850 boards, CrossFire was effectively limited to a maximum resolution of 1,600x1,200. For an ultra-high end

Improving the breed

SLI keeps getting better, thanks to ATI

Yup, you read that right. SLI has improved out of sight since the first review samples arrived at PCF Towers over a year ago. At least in part, we've ATI to thank for it. That's because when NVIDIA launched SLI, it was unique. Without competition from ATI, NVIDIA was under no pressure to address the niggles that afflicted SLI, including instability problems, the requirement to run two absolutely identical cards from the same manufacturer and the need to reboot to enable and disable SLI. Then ATI revealed CrossFire and claimed an advantage in each of those areas. Sure enough, NVIDIA has responded by fixing or significantly improving every one of those issues.

In the end, the consumer benefits from competition.



All the nicely rendered she-warriors in the world can't help if performance is sub-par.

solution, that represents some serious suckage. That problem, at least, is dealt with on CrossFire Mark II. All Radeon X1800 boards sport the crucial dual-link DVI ports, allowing resolutions of up to 2,048x1,536 (and also the increasingly important 1,920x1,200 widescreen resolution).

IT'S IN THE SILICON

SLI, by contrast, is the full integrated-into-silicon Monty and uses a proprietary high-bandwidth link, present in all 6 and 7 series GPUs (if not on all 6 and 7 series boards), to transfer the data. The result is an absence of messy dongle cables and much more flexibility in terms of resolutions and refresh rates. Of course, it also means that any SLI-capable NVIDIA graphics board can be used as either a master or a slave card.

However, when it comes to rendering capabilities, there's precious little to separate them. Both systems offer similar options, including Alternate Frame Rendering (AFR) in which one card renders the odd frames

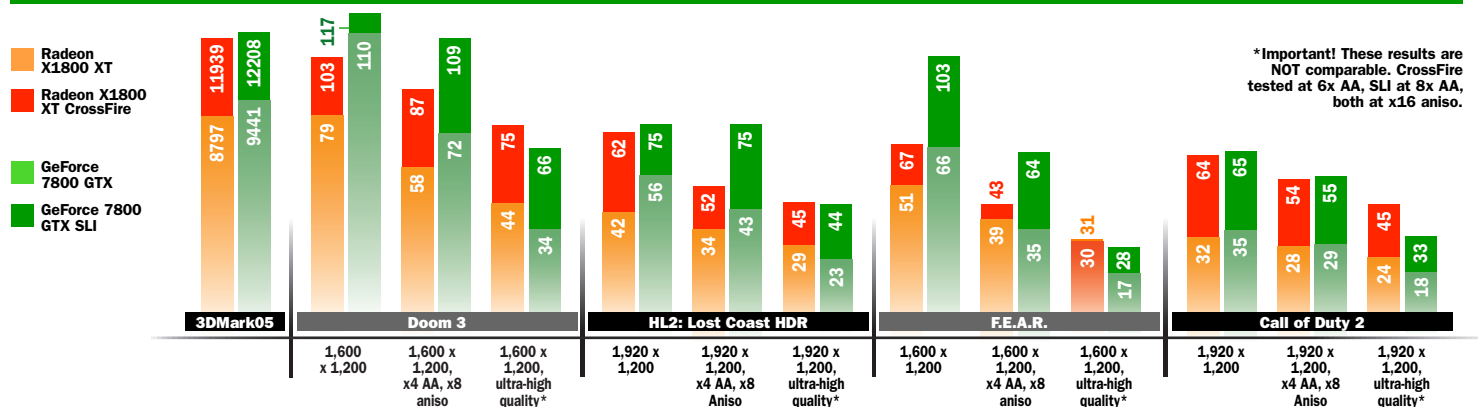
and the other the even frames, dynamic split-screen rendering where the screen is divided horizontally, with the proportions determined on-the-fly depending on where the graphical intensity is concentrated, and fixed split-screen rendering. And as a rule, both SLI and CrossFire require profiles coded into the driver to deliver a significant performance boost in any given game.

Granted, it's true that ATI also offers an additional Super-tiling option which is the default mode for games with no profile. But at best this provides a modest performance boost, and at worst we found games with no driver profile can run slower on CrossFire than an equivalent single-card system. Profiles are essential to good dual-rendering performance.

But what exactly is "good" dual-rendering performance? As we've already suggested, the ideal result is double the performance of a single card. Both SLI and CrossFire come close to delivering that in a handful of benchmarks. However, several factors

Top end dual-card graphics put to the test

PCF benchmarks with possibly the highest 3DMark05 scores you've ever seen...



UP CLOSE The cards behind the duel

Here at last

Oh yes, we used a genuine CrossFire motherboard. Previously of rocking horse poo status, retail CrossFire kit has finally become available. This particular example is an Asus A8R -MVP It's a very quick all-round customer, but like all Radeon Xpress 200 boards, it only has 8 available PCI Express lanes. The Asus NForce4 board powering the SLI rig has the full 16 on both sockets.

Display demands

Warning: do not even consider bagging a high end CrossFire or SLI rig unless you have a display capable of 1,600x1,200. You simply won't get any benefit compared with a single card at resolutions of 1,280x1,024 and below. However, if you have a fancy-pants 1,920x1,200 panel, then you'll be needing a dual card rig to play the likes of *F.E.A.R.* smoothly at native resolution.

Card compatibility

In *PCF's* not-so-humble opinion, offering a realistic upgrade path is crucial for a dual-card graphics platform. So, when SLI launched with a requirement for absolutely identical video BIOSes we were very disappointed. But now that's been fixed, SLI has become much more attractive. As for ATI, CrossFire remains lumbered with the need for a mastercard, even if it's slightly more flexible in terms of matching cards up.

Cross-platform CrossFire?

The PC is the greatest open-standard platform in the world, right? Which is why we object to NVIDIA keeping SLI locked down to its own NFORCE4 motherboards. Of course NVIDIA claims that it's preventing the sale of underperforming SLI rigs. But we've seen evidence that SLI runs fine on other dual-PCI Express chipsets. ATI has opened CrossFire up to Intel's new 975 chipsets, let's hope NVIDIA follows suit.

Cool 'n' Quiet

One of the most impressive aspects of the GeForce 7800 GTX 512MB is just how cool and quiet it runs. That goes double for two of the blighters. What's more, in terms of power consumption, a pair of 512MB GTXs is less hungry than two Radeon X1800 XT's. While the SLI rig was happy with a 480 Watt Tagan PSU, the CrossFire system wouldn't play ball until we gave it its own dedicated PSU.

militate against the across-the-board attainment of the 2X performance maxim. In all but the most graphically demanding games, current CPUs simply can't keep up with the power of a pair of high-end video boards. Even a great-looking game like *Far Cry* is effectively CPU-limited at 1,600x1,200 or more. But even with infinite CPU power, neither Crossfire nor SLI would offer performance doubling on all occasions. Only when rendering in AFR mode can these systems approach maximum efficiency, and as we explained in our CrossFire preview last summer, that's often impossible with games that make use of render-to-texture commands.

PIXEL POWERHOUSE

Nevertheless, NVIDIA's SLI platform in dual GeForce 7800 GTX 512MB trim puts in a particularly impressive performance. Resolution and detail settings dependant, it breaches the 90% performance boost barrier more frequently than the CrossFire Radeon X1800 XT. In our benchmarks, ATI manages that only once, in *Call of Duty 2*. NVIDIA adds *Doom 3* and *Half Life*

2: *Lost Coast*, as well as topping 80 per cent in *F.E.A.R.*

Of course, given that a GeForce 7800 GTX 512MB typically has the better of a Radeon X1800 XT, ATI's only chance to win the outright contest was to deliver superior dual-card performance scaling. And it can't, so it doesn't. With the possible exception of *Far Cry* (CPU limitations make comparisons in that game tricky), the SLI is faster, and sometimes a whole bunch faster. Making NVIDIA's victory all the more impressive is the fact that a pair of 512MB GTXs also runs cooler and quieter and uses less power than two Radeon X1800 XT's. That puts the win firmly in the big N's camp.

For performance, then, it's SLI all the way. But if you add the improvements NVIDIA has made to the SLI platform (see boxout) and the fact that SLI is simply more mature, stable and reliable, it's really no contest. We may not be entirely convinced that dual-card PC rendering makes that much sense. But we are sure of one thing. If you do fancy doubling up, go mean and green when choosing your twin-graphics machine. **PCF**



This monstrous device actually runs relatively quietly, and shouldn't bring your PSU to its knees either.



ATI CrossFire with Radeon X1800 XT

Supported motherboard chipsets

ATI Radeon Xpress 200 CrossFire, Intel 975

Supported graphics chipsets Radeon X1800, X1600, X850, X800

PSU required 550 watt+

Rendering modes AFR, Dynamic split-screen, fixed split-screen, Super-tiling

Other Max AA 14x, Max resolution 2,048x1,536 (X1800 only)

75%

PCF says... "A complete MissFire? No, but beaten by almost every measure."

NVIDIA SLI with GeForce 7800GTX 512MB

Supported motherboard chipsets NVIDIA NFORCE4 SLI, NVIDIA NFORCE4 SLI 32

Supported graphics chipsets GeForce 7800, 6800, 6600

PSU required 480 watt+

Rendering modes AFR, Dynamic split-screen, fixed split-screen

Other Max AA 16x, Max resolution 2,048x1,536

90%

PCF says... "SLI finally lives up to its promise. A bit on the pricey side, of course..."

TESTED!

We filled the PMPs below with music and movies, and then got to work.

Archos AV500 £349

Archos virtually started the PMP revolution. The AV500 has great battery life and the biggest screen here. Mind you, you know what they say about old dogs and new tricks.

Creative Zen Vision £349

This packs in a transreflective screen for viewing in full sunshine and an FM radio for when you get bored of your MP3s.

Goodmans GPDR40 £299

It has a bigger hard drive than any other PMP here, an SD card slot and doubles as a TV PVR... but with all the cosmetic charm of a house brick.

iRiver PMP120 £249

Looks that mimic a handheld game gadget and a Linux OS earn the thumbs up. The 20GB hard drive could be a little bit tiddly for DVD archiving, though.

Apple iPod £219

OK, it's made by Apple and the iPod brand is starting to pop out the other side of cool and become passé – so we're ambivalent on principle. But admit it we must, the new iPod is sleeker and more desirable than ever and just about does video, too.

Personal service

Is that a PMP in your pocket? If so, have you got last night's EastEnders on it?

Richard Stevenson puts the hottest portable entertainment gadgets through their paces

The personal MP3 jukebox is so yesterday. To cruise down the boulevard (or at a push, Staines High Street) knowing you are an icon of 21st century style, you need a personal media player. A portable device containing not just Busted's greatest hits but movies, pictures of your cat, the odd game and even last night's *X Factor* to catch up with on the train home.

There is certainly no shortage of PMPs on the high street either. Almost every PC peripheral manufacturer on the planet has realised that small, high capacity hard drives and miniature LCD screens are inexpensive (thank you, China) and crowbarring them into a tiny plastic case with a lithium battery and some compression codecs is not rocket

science. This has given rise to as many horrific aberrations of PMP-dom as it has iconic multimedia players of style and substance. So caveat emptor, or buyer beware, as they say outside the Roman Empire.

While we're not known for kicking an underdog (unless it's tied up and muzzled), we would advise sticking with the better known brands unless you get a good chance to compare before you buy. Even in our shootout of the big hitters, there are some flaws that seriously undermine otherwise well-specified and competent devices. Brands without previous form are likely to struggle to get the mix perfect on the first few incarnations – Apple's iPod finally coming of age in its fifth generation being a case in point.

HOW WE TESTED

Small is beautiful

Our contenders were selected from the PMPs on the market by a ruthless selection process. This touched on factors such as price, spec, features, practicality and looks. Each was fully charged overnight while we set about installing the five software packages on a PC, and in some cases, reinstalling them again with the aid of hot, sweet tea.

Each model was then hooked up to the PC and pictures, video clips and music files ported across. In the case of models with PVR abilities, the time was set and programmers primed

to hook up to the TV. We pored over their audio and video performance, and their ability to do what they say on the box. Additional accessories and features such as FM radios and card readers were run up to see if they pass muster, and the PVRs set to record some soap viewing.

Finally, we took them out on the road and into the skate park to gauge opinion of their cool factor and street worthiness. It also gave us an opportunity to test their shock resistance as we did some radical aerial vert tricks in the halfpipe...

PMP MY RIDE

Also, consider what you are going to use a PMP for before you buy. A 160GB device with a 10" screen and a battery pack that could jump-start a truck will be fine at home; hauling it through a mêlée of commuters at Charing Cross won't be fun. Small machines that slip into your pocket and leave room for a phone and a copy of *PCFormat* won't cut it when you try and download the *Simpsons* back catalogue.

If looking the part is important, always examine the PMP you are thinking of buying in the flesh before you flex the credit card. Some manufacturers are masters of making a photo of a pig's ear look like an

electronic silk purse. An image taken straight-on might not reveal that a PMP actually has the size, weight and cosmetic appeal of a house brick. Of course, this is *PCFormat*, so you can rest assured that in our PMP test, we'll tell it like it is. So read on for the bigger picture...





Photography Gavin Roberts



Creative Zen Vision

£349

Web www.creative.com


91%

Creative's portable devices are second only to Apple in terms of sheer coolness, and the Zen Vision is positively frosty. The dark grey (or pearl-white) case is weighty, curvy and slips neatly in the pocket.

Moreover, the spec-sheet reads like a What's What of trendy features.

Surprisingly, then, the superb resolution 640x480 screen is stoically 4:3 traditional ratio. One could argue that acreage is perhaps more valuable than widescreen format at this size, although those downloading 16:9 or even 2.35:1 cinemascope videos will beg to differ. But if you get bored of the TV screen, there's always a built-in FM radio to enjoy, a slick image viewer and a host of PDA-like functions, including calendar, tasks and contacts.

From the swirling aquatic boot-up screen the display really shows its colours – all 250,000 of them. The image is crisp and sharp with excellent contrast and the transreflective screen makes it watchable even in broad daylight – well almost. Image processing is a bit sluggish and on busy screens the motion gets a touch of jerkiness... but we can forgive it that for having DivX support, good headphone sound and a CF card slot.

Operationally it's cool too, with just a few easy access buttons, clear menus and a neat volume control on top for those days when it's taking it easy as an MP3 player. The video selection hasn't got the slick thumbnails of the Archos nor the dedicated TV recording features (although you can still wing it as a PVR), but you can't help but admire Creative's smooth and effortless simplicity. An all-round winner. 



Apple iPod

£219

Web www.apple.co.uk

84%

The new iPod isn't a proper PMP in the same way as the other four contenders here. Take a basic iPod music player, add a slightly larger screen, a 30GB hard disk, a jpeg file manager and an MPEG4/.H264 decoder... and you really don't end up with a device you'd want to watch a movie on.

Then again, the screen displays at a healthy 320x240 resolution. It's bright and crisp, and video processing is fluid. More to the point, the screen is set into simply the sexiest, classiest, most stylish personal gadget ever. It's way smaller than everything else here in every dimension; waif-like, and so very Apple. Just walking around with this in your hand justifies the price and it has solved many of the old iPod foibles. It works with both Macs and PCs, has a colour screen and the battery life is up to a respectable 14 hours with music.

Of course, as penance for daring to attach an iPod to a Windows XP PC, the software failed to load properly, the device locked solid and iTunes made 133 copies of AC/DC's *Back in Black* before we pulled the plug. Second time round, the install worked fine and, as we all know, that scroll-wheel and the menu-driven interface are just peachy. Or should that be Applepy?

But that doesn't change the fact that, among the well-connected and flexible big-screen entertainers here, the iPod is left wanting as a true PMP. Do we still want one anyway? Um, yes!

Archos AV500

£349

Web www.archos.com

85%



Living on the bleeding edge of PMP development has given Archos a jump on its rivals, even if the old AV500 is rather a veteran. But in a Cliff Richard-esque sort of way, it still manages a youthful appearance, can sing with the best of them and even does a good turn as the VCR at Christmas. In fact, the AV500 is touted as a digital video recorder (DVR) first and foremost, and is packaged with all the relevant leads and a TV-style remote control to turn it into a domestic PVR.

It offers a sumptuous four-inch LCD widescreen display, but this is a bit dim for full daylight use and there is a fair bit of grain and picture noise even on high bit rate MPEG4 recordings. This is due, in part at least, to a less than impressive 480x272 resolution, but the 30GB HDD gives up to 130 hours of compressed video, or about a third that in near-DVD MPEG4 at 1500Kbps. Of course this capacity will take a nose dive if you store lots of high-res images.

The brushed metal case is robust but the square edges and square buttons are really rather uncomfortable. The Archos is also challenging for anyone who hasn't got fingers like sharpened pencils. If your palms end in a value pack of saveloys, be prepared to fumble around like your dad. Thankfully the interface is straightforward, the disc access is fairly swift and the sound through the headphones nice and robust.

In fact, the Archos cuts the mustard as a stylish PMP and PVR. Better still, as it comes to the end of its innings, cut-price clearouts may make it a steal.



iRiver PMP120**£249**Web www.iriver.com**73%**

Shaped like a handheld console, the iRiver PMP120 feels remarkably light and comfy in the hand. Sadly this promise of easy operation stops right there as the buttons require a vice-like finger pressure to operate, and even then, this PMP answers to instructions with all the alacrity of a narcoleptic sloth.

The picture is also rather dark and moody even with the brightness wound up to the maximum setting – but probably the best video processing of the bunch is a superb redemption. OK, the screen is 4:3 but it has great colour and detail, smoothly scrolling action and genuine depth of field. Of course, take it outside into broad daylight and the picture all but disappears, a drawback not helped by a high-gloss screen that reflects every stray photon of light in the county.

Huddled in your darkened room, clutching the iRiver's handles like Gollum, you then get to experience the least transparent operation system of the bunch. We pored over the manual trying to fathom the most basic functions, but by the time we had seen the same clip of *Garfield: The Movie* for the 23rd time and couldn't work out how to get back to the home page, we turned it off and went out for some lasagne.

It offers a price advantage and certainly looks the part, but the PMP120's bijou 20GB hard disk, painful interface and a screen that has turned to the dark side don't make it a force to be reckoned with.

Movie Photography © Disney Enterprises, Inc. & Walden Media. All Rights Reserved

Goodmans GPDR40**£299**Web www.goodmans.co.uk**70%**

Out of political correctness, lesser magazines might portray the Goodmans GPDR40 as cosmetically challenged – but not us. At near twice the depth of the Archos and Zen models, the Goodmans is a big boy and the breeze block looks really don't do it any favours. Conversely, it does pack the biggest hard drive of the bunch at 40GB.

The interface is pure Fisher Price, with near-cartoon graphics and a novelty noise when keys are pressed. But it is fantastically simple to use. The buttons and side wheel are spot on. Better still, its media centre functions slickly transform it into a fully fledged PVR so simple in execution that it makes even the Archos' TV recording interface look complex.

On the downside, the screen is 4:3 and low res; the fluffy picture and the fact the Goodmans don't even mention the resolution in the specs should be taken as hints. Moreover, the Goodmans was one of the two devices here that gave us software grief with a few JPEG files corrupting on transfer – although in the great way of PC-based technologies, this was an intermittent bug.

Still, that 40GB drive is ripe for ripping a monster amount of content to, it works well as a PVR and there are even a couple of basic games, should you feel then need. The final nail however is the price. While favourable on paper, the GPDR40 falls foul of Goodmans limited distribution and is stoically £300 on the high street, while others here can be found all over the internet for considerably less.



Movie Photography © UIP

Conclusion

It's all over bar the shouting – but what have we learned?

If this fiercely fought contest demonstrated one thing, it's that looks count. Dragging up the rear with a bag over its screen is Goodmans' GPDR40. Conclusive proof that having a big 'un doesn't make up for looks that could curdle milk. Useful features and simple operation could make it a winner for domestic duties, but the high-street pricing is none too attractive if you consider the web-discounted alternatives.

The iRiver

PMP120 finds itself in the same reject pile. It's affordable, but flawed, and its hard disk is half the size of the Goodmans' 40GB beast. It could have been a contender, as Brando might say – if it weren't for its dark display, painful menus and buttons that need a G-clamp and a pair of mole-grips to operate.

Apple's new Video iPod, design wise, is sex on a stick. It radiates ludicrous amounts of 'buy me' appeal and justifies

its price purely to say you have one. It's not a great video player however, as the screen is just too darn small. Hence, in this PMP shootout, it comes in third.

The veteran Archos is actually very competent despite its age. It ticks all the right format boxes, has a reasonable screen, and plenty of add-on features you might find useful. It even sports

decent looks to keep your street cred intact. It's soon to be replaced by the even sexier AV700 with a

whopping seven-inch screen though – so look out for an end-of-line AV500 bargain. This leaves Creative's Zen Vision to cruise in as top dog in our PMP face-off. It's the complete package: well-specced, with a great screen, good connectivity, intuitive menus and looks that make people stroke it and go "ooh!"

No other gadget here performs as consistently in all departments – and that's more than enough for us. **PCF**

"Creative's Zen Vision is top dog in our PMP face-off"

Quality vs quantity

It's what you do with it that counts

Despite steady improvements in audio and video performance in household video devices, don't expect high-end hi-fi performance from PMPs. The need to mobilise media has meant squeezing digital data into an ever smaller space and MP3, AAC or MPEG4 are all simply compression algorithms. While they do enable you to store more than a handful of albums and a couple of films on a 30GB drive, they all degrade quality using clever maths, psychoacoustic compression and 'redundant' bit-loss.

However, that doesn't mean you can't tweak things a bit to squeeze the best quality performance out of the remaining data. Most ripping software allows you to specify a bit-rate and anyone familiar with MP3s will know that ripping at 64Kbps gives a sound a flat as a pancake with negligible bass. 128Kbps is a realistic minimum (and the default for Apple's AAC codec) for respectable sound from audio media, and around 1,000Kbps for decent MPEG4 video.

If you have a large capacity PMP and are only likely to

quarter- or half-fill it, then you can max out your audio and video quality by using the highest fixed bit rate available – usually 192Kbps for music and 1,500Kbps for video. If space really isn't an object then variable bit-rate (VBR) ripping is even better, altering the compression rate depending on the content. With music, for example, that equates to between approximately 240Kbps and 460Kbps – giving consistently excellent results.

For the diehard audio or videophile buying into PMP or even media centre technology, you cannot achieve better compression quality of stored content than by using a loss-free algorithm like WMA Lossless. No bits are harmed, maimed or needlessly disposed of using this codec, and data rates can be as high as 900Kbps on really large files. WMA Lossless will compress a typical CD down to about half of its original size – around 250MB. OK, so you'll only get 120 CDs or around 1,500 tracks on a 30GB PMP – but it will sound fabulous.

IN DETAIL Looking for perfection in all aspects

£219

Apple iPod

84%



£349

Archos AV500

85%



£349

Creative Zen Vision

91%



£299

Goodmans GDPR40

70%



£249

iRiver PMP120

73%



	Apple iPod	Archos AV500	Creative Zen Vision	Goodmans GDPR40	iRiver PMP120
Capacity	30GB	30GB	30GB	40GB	20GB
Screen size	2.5-inch	4-inch	3.7-inch	3.6-inch	3.5-inch
Screen resolution	320x240	480x272	640x480	320x240	320x240
Video playback	MPEG4, .mov	MPEG4, AVI, WMV9	MPEG4, AVI, WMV9, DivX	MPEG4, AVI, ASF	ASF, AVI, DivX
Music playback	AAC, MP3, WAV, AIFF	MP3, WMA, WAV	MP3, WMA, WAV	MP3, WMA, WAV	ASF, MP3, WMA
Photo formats	JPEG, BMP, GIF, TIFF	JPEG, BMP	JPEG	JPEG	JPEG, BMP
Built-in radio	No	No	FM	No	FM
Built-in speaker	No	Yes	Yes	Yes	Yes
Memory card slot	None	None	CompactFlash	SD	None
Battery life (music)	14 hours	15 hours	13 hours	9 hours	12 hours
Battery life (video)	2 hours	4.5 hours	4.5 hours	2.5 hours	5 hours
Dimensions	62x103x10mm	124x76x18mm	124x74x20mm	110x80x30mm	139x84x32mm
Weight	134g	225g	239g	300g	280g



PACY PANEL

ViewSonic VX922

ViewSonic's latest 19-inch screen aims to make tardy LCDs a thing of the past

Price £345 Manufacturer ViewSonic Web www.viewsoniceurope.com/uk

Creeping ever upwards from their original 15-inch mass-market dimensions, 19-inch monitors have become the screen of choice for most PC users. Although the native resolution of 1,280x1,024 pixels offers no advantage over 17-inch LCDs, you do get to see the bigger picture, ideal for squeezing multiple windows onto your display. But that isn't what ViewSonic's new VX922 is all about. It's speed.

Pushed by games and DVD movies, LCDs have a tough job to keep up. Unlike CRTs, whose phosphors light up immediately when bombarded by electrons, liquid crystals need time to react, filtering the glow from their backlights. Traditionally, this has meant that the pedestrian pace of LCD screens makes them second best for gamers and movie fans. But while there are plenty of LCD monitors with lengthy 25ms response times or longer, the VX922 shrinks the figure to an astonishing 2ms.

In practice, even watching rapidly changing brightness levels from DVD movies, movement is stunningly smooth on the VX922. Other specifications impress too, with high brightness and contrast

levels and both analogue and digital inputs. You don't have to worry about tinny speakers ruining the soundtrack either; the VX922 doesn't have any, instead leaving it to a proper, separate speaker set.

POETRY IN MOTION

This is a quality item, and so it should be, costing around 50% more than similar LCD panels. The controls are easy to get at and the menus are also straightforward. The Auto setting gave a perfect picture with no need for any fine-tuning, while the colour rendition proved accurate at its default 6,500K colour temperature. There's no denying that the VX922 is a pricey monitor, but speed always costs. **Matthew Richards**

Screen size	19-inch
Native resolution	1280x1024 pixels
Max contrast ratio	650:1
Max brightness	270 cd/m ²
Viewing angles (V/H)	170/170°
Response time	2ms
Video inputs	1x analogue, 1x digital
Built-in speakers	No

82% PCF says... "When speed is of the essence, the VX922 responds."

TUNER CULTURE

LG Flatron M2343A-BZ

Unlike you, the M2343A isn't torn between computing and what's on telly

Price £789 Manufacturer LG Electronics Web www.lge.co.uk

Tricky question, this one: do you finish what you're doing on the PC or do you nip over to the TV and catch the latest labyrinthine developments on *EastEnders*? It's not a problem if you have an LG Flatron M2343A, as you can do both at the same time, and in quite some style.

Cheaper than many 23-inch widescreen LCD TVs, the 16:9 aspect ratio of the screen plays host to computer inputs as well, in both analogue and digital varieties. As a crossover product, the LG works a lot better than many 28-inch panels that we've seen. While the native resolution is the same, the finer dot pitch makes the monitor much more comfortable to view up close; you get the impression of a smooth picture rather than a sea of dots. Meanwhile, the screen is large enough for viewing TV from across the room, where you can sit with the fully featured wireless remote.

The widescreen aspect ratio has an obvious advantage for watching DVD movies, especially with the screen's very respectable 8ms response time. However, it's also good for multi-tasking, giving you loads of space for multiple windowed programs. With good

colour rendition, the format is also handy for photo editing, enabling you to keep toolbars to one side.

A BROAD VIEW

Naturally, the LG has its own built-in TV tuner, so all you need to do is to plug in an aerial, and you're in business. Full PIP (picture in picture) support enables simultaneous telly-watching and computer work and the LG goes one better by being HDTV-ready. There are also SCART and phono sockets around the back for attaching gaming consoles and the like. Sound quality isn't fabulous, but with SRS-WOW technology it's a lot better than the average LCD monitor, rounding off the package quite nicely. **Matthew Richards**

Screen size	23-inch widescreen
Native resolution	1,366x768 pixels
Max contrast ratio	550:1
Max brightness	600 cd/m ²
Viewing angles (V/H)	178/178°
Response time	8ms
Video inputs	1 x analog, 1 x digital, 2 x SCART, phono
Built-in speakers	Yes

78% PCF says... "A very competent flat panel with fuss-free controls."





SOLID STATE

Rock Direct Xtreme CT

At last, we've got a genuine alternative to the Inspiron XPS from big bad Dell to play with. But is it hard enough?

Price £1,551 **Manufacturer** Rock **Web** www.rock-direct.co.uk



We've said it before. And we'll say it again. Dell's Inspiron XPS Gen 2 is the standard by which all others are judged. It was the first notebook ever to offer genuine, desktop-rivaling 3D performance. It did so in a relatively compact and portable package. It remains best of breed today.

What hope, then, for Rock's latest effort, the Xtreme CT? Quite a lot, actually. Granted, it's another clone system engineered and largely manufactured by Clevo. But by shamelessly ripping off the Inspiron's successful recipe of components and its form factor, while undercutting it and adding a unique feature or two, the Xtreme XT has caught Dell napping.

Just like the Inspiron XPS, the secret to this notebook's success is Intel's Pentium M mobile processor. With grunt comparable to AMD's Athlon 64 CPU,

and an operating frequency of 2.13GHz, it gives virtually nothing away to the fastest desktop chips. And yet it consumes a tiny fraction of the power and dissipates virtually no heat. Consequently, the Xtreme CT is relatively slim and compact for a 17-inch laptop.

HARD ROCK

Of course, the inclusion of NVIDIA's latest mobile GPU, the GeForce Go 7800 GTX, is pretty important. With 24 pixel pipelines and a core frequency of 400MHz, the performance gap to the desktop GTX is miniscule. If it weren't for the recent release of the über-clocked 512MB variant of the 7800, this notebook would be a match for any desktop NVIDIA card.

The final key ingredient is the truly luscious 17-inch widescreen LCD. With a native resolution of 1,680x1,050, it's



Anything your desktop PC can do, this high-spec laptop can probably do better.

not as expansive as the Inspiron XPS'. It's a perfect match for the Go 7800 graphics: with the possible exception of F.E.A.R., this laptop will render any game you choose at native resolution and with the anti-aliasing and anisotropic filtering cranked up. And compared with desktop panels, the pixel pitch is still very tight. Bung in strong viewing angles and quick response times for a mobile LCD and the result is breathtakingly detailed visuals. Desktop or laptop, this is as good as PC graphics get. **Jeremy Laird**

CPU Intel Pentium M 2.13GHz

Chipset Intel 915M

Graphics NVIDIA GeForce Go 7800 GTX, 256MB memory

Screen 17-inch, 1,680 x 1,050, 16:10 aspect

Hard drive 80GB, Hitachi 7,200rpm

Memory 1GB 533MHz DDR2

Ports 4 x USB, Firewire, DVI, modem, S-video

Networking Gigabit LAN, g-spec wireless

Dimensions 397x294x44mm, 3.8Kg

Warranty Three years

90% PCF says... "£350 quid cheaper than an equivalent XPS, and damn near as good."

BENCH MARKS

	DOOM 3 1,680 X 1,050, X4 AA, X8 ANISO	FEAR 1,680 X 1,050, X4 AA, X8 ANISO	HL2: LOST COAST 1,680 X 1,050, X4 AA, X8 ANISO	3D MARK 05 1,024 X 768
ROCK XTREME CT, GEFORCE GO 7800 GTX	54	24	36	6753
ROCK XTREME CT OC: CPU 2.45GHZ, GPU 475MHZ	64	N/A	N/A	7979
PCF „CRAZY FAST“ P4 3.6GHZ DUAL-CORE, 7800 GTX PC	57	26	40	8169

More benchmarks and details can be found on your DVD



BASKET CASE

Lian Li PC-777

Bored of the traditional PC cases on offer? Try this unassuming little number...

Price £237 Manufacturer Lian Li Web www.lian-li.com

An element of absurdity deserves a place in every PC case. Lian Li's daring ATX/BTX conch looks like something to which a particularly burly hermit crab might aspire, but its design is actually very clever.

The curves on this model are used as component containers, which makes it a very roomy case. The PSU tucks into the base, and is well vented from below. Up to six of each drive size are supported, and a removable floppy bracket is included in one of the 5.25-inch bays. Hard drives nestle behind the front air intake, within a well ventilated quick-release 3.5 inch rack. This uses special screws to allow your drives to slot straight in. We didn't get any such screws with our case, though, so our drives were left dangling.

STEEL YOURSELVES

Brushed aluminium has two big advantages: it looks cool, and it tends to render cases that look like they should weigh a ton surprisingly portable. It's definitely been put to good use in this version of the PC-777. You could lift it up in front of girls to impress them with your Atlas-like physique. The embossed black shells on each side are made of perforated

metal, which provides for a pleasant glow if your box is filled with lights.

The vast number of vents is also a bonus if you're planning to fill your case with dust. A spot of occasional light dusting isn't all that difficult though, as there's a lockable one-screw side panel removal method, and it's well covered in terms of internal air movement. An absolutely huge yet impressively quiet rear fan takes up much of the room that the PSU previously would have, while the filtered front fan should block any dust from the fore.

If you want an awesome case at a reasonably expensive price, this is for you. Your money buys you quality and space, and this case is an ambitious attempt at a break from the norm. Whether you'd want it in your house is another matter entirely. **Alex Cox**

Fans 2 x 12cm

Bays 6 x 5.25in, 6 x 3.5in

Architecture ATX, adaptable to BTX

Ports Top-mounted buttons, sound, USB, FireWire

Size 246x645x574mm

76% PCF says... "A huge and unusual case – certainly an eye-catcher."

SOFTLY SOFTLY

Antec P150

Silence is golden. Or in this instance, unassuming silver and white

Price £120 Manufacturer Antec Web www.antec.com

White may be the new shellsuit, but we won't hold it against Antec's latest component-housing box. The P150 is packed to the rafters with innovation, practicality and great design, so I think we can forgive it for looking like an iPod that's been at the pies.

The first gold star in the P150's exercise book is for its power supply. The Antec Neo HE PSU is one of the best units around at the moment (PCF182, 90%), partly for its decidedly natty modular cable design, which means you only need to plug in as many molex cables as you need. It's also practically silent; a single 80mm fan would be noisy you'd think, but actually, you really can't hear it.

In fact, noise cancelling is the name of the game throughout the P150's structure. The base and sides are lovingly swathed in high-density, lightweight foam to reduce panel vibration. But by far the oddest – and most effective – piece of onboard design is the hard drive enclosure. While your hard drive can be locked into place (the chassis is screwless throughout), there's an optional rubber-cabled hammock to rest

your drive in. It's a great idea if you're not planning on shifting your box around, as it removes any vibration from the drive. We all know how bad a seeking drive can sound – like the world's supply of Twiglets in a meat grinder – so it's a pleasant reprieve for tired ears.

CASE CLOSED

Providing your GPU and CPU fans are quiet, this case will make your PC almost silent. And it runs cool to boot – there are internal cable-managing clips to keep the airflow unimpeded, and a single, massive, low-RPM 120mm fan drives cool air through the chassis. £120 it may be, but if the old axiom of getting what you pay for is true, then it's the Antec P150 that provides the ample proof. **AI Bickham**

Power supply 430W

System board form factor ATX

Supplied fans 1 x 120mm

Total fan mounts 3

5.25" bays 3

3.5" bays 4

Weight 13.7Kg

86% PCF says... "A classy case, packed with intelligent design."



The Squeezebox's display has liquid-like transitions and even supports True Type fonts. Fancy!



SUPER STREAMER

Squeezebox

It may be slim by name, but you'll be pleased to hear that it's grotesquely distended with features by nature

Price: £229 **Manufacturer:** Slim Devices **Web:** www.slimdevices.com

The internet, remote controls, mechanical corkscrews, motorised spaghetti forks – all these technological things have become so essential to our daily lives that we barely know we're using them, and wouldn't even dare to think how we got along without them.

Slim Devices has been trying to get a piece of kit into that enviable position for a while now, the SLIMP3 player came painfully close back in 2002 but it was fiddly to set up and mightily expensive. Eagle-eyed readers will notice that one of these niggles is still present, but the other has disappeared without a trace.

NO PRESSURE

The Squeezebox couldn't be easier to set up. Plug it into a wall, fire it up and bingo, it'll sniff out any wireless networks in the area. From there simple menu navigation makes entering any WEP keys or passwords a doddle and then the hardware is good to go. The software backend that sits on your PC is open source and free for anyone to download. It's equally simple to get running, requiring none of the .Net framework nonsense some other media streaming

hardware demands. With these two components working you can beam your entire MP3 (WMA, OGG, ACC or just about any other audio codec) collection around your house to the Squeezebox and thence to your stereo.

It doesn't end there, either. Even with your PC turned off, the Squeezebox can still access the internet through your wireless router and stream stuff from the web. Suddenly a virtually infinite world of podcasts, ShoutCAST stations and internet radio is available in every room. An eclectic selection is pre-



Bridge of sighs

Is there nothing this box can't do?



The Squeezebox can also be used as a wireless bridge. We had it set up with a Pinnacle Showcenter 1000 and were streaming movies from our PC while listening to Hancock's Half Hour on BBC 7, and reading Slashdot RSS feeds. All were smooth as silk. Now that's the future, right there.

"One of the most desirable pieces of wireless kit we've ever seen"

programmed, but cut and paste a URL into the backend interface and you can add as many streams as you like.

Factor in programmable RSS feed news tickers, a bewildering array of ambient natural sounds (we are currently falling asleep to the digitised sound of heavy rainfall and a distant thunderstorm), games (sideways *Tetris* anyone?) and, this being open source, an already blossoming plugin development community (TV listings, a download manager for listening to the BBC's Listen Again radio archive...) and you have one of the most well-thought-out, accessible and desirable pieces of kit we've ever seen.

Our sole complaint with the Squeezebox is the price. If you're loaded, waste no time at all and purchase one of these beauties today. If you're a person of limited means you should be aware that an Xbox 360 and all its media centre goodness could be yours for the same money. We know this though: the people at Slim Devices will have to pry the Squeezebox from PCFormat's cold, dead hands if they ever want it back...

James Carey

Inputs 802.11g wi-fi, ethernet

Outputs Digital optical out, Digital coax out, analogue out (RCA), Ethernet, headphone mini jack

Dimensions 192x93x80mm

Screen 320x32 pixels, greyscale

92% PCF says... "Totally awesome and essential hardware. Sell your children to own one."



GOGGLE BOX

Hollywood@Home DVB2GO XL

Who needs a portable telly when you can turn your laptop into a digital TV receiver?

Price £62 Manufacturer Gainward Web www.gainward.net

We took one look at the DVB2GO's titchy aerial and thought, "if that gets a decent picture, we'll eat our legs". Now, we're spreading tomato ketchup on our knees and preparing to tuck in. It doesn't look like much, but the DVB2GO does a good job of bringing digital TV to your PC.

TV TIMES

The DVB2GO XL is designed for desktops and laptops alike, but we think it makes the most sense when you hook it up to a portable PC. It's slightly larger than an iPod, doesn't need a separate power supply and hooks into a spare USB 2.0 port; connect the little aerial to the unit and you're ready to go.

The software scans for available channels and the whole process takes around a minute; once it's completed you can flick between digital TV and radio channels. You can view programmes in full screen or in a window, and picture quality is pretty good – albeit a bit blurry if you're looking at text – with adequate stereo sound.

In addition to TV and radio reception, the DVB2GO enables you to record programmes either

manually or automatically, and you can also pause and record live TV. Unfortunately the time-shift feature isn't very intuitive: you'd expect the pause button to freeze things, but that only works if you've also clicked time-shift first.

The DVB2GO can also handle EPGs and Teletext where available, but don't expect a snazzy interface: instead, you get a rather naff dialog box. It works well enough, though, and you can schedule recordings by double-clicking on the appropriate show.

We like the DVB2GO: it's small, cheap, easy to use and works well – provided you live in an area where you can receive Freeview. Be careful with that aerial, though: if you break it or lose it, the DVB2GO is useless.

Gary Marshall

Accessories Remote control, UHF aerial (both included)

Connection USB 2.0

Video format MPEG-2

Aspect ratio 4:3, 16:9

Time shifting Yes

Scheduled recording Yes

EPG Yes

79% PCF says... "Excellent TV reception but in a clunky interface."

UNDERSTATED NOISE

Creative Gigaworks G500

Speakers with a sub so big it's less part of the furniture and more part of the family

Price £260 Manufacturer Creative Web www.creative.com

These speakers present a paradox. They look fantastic, with expensive-looking cones and THX certification emblazoned on the removable grilles, yet they don't draw attention to themselves as much as some sets. There are no flashing blue lights or shiny bits shouting about the fact that you've surrendered so much desk space to a family of little noisemakers. This is a good thing, as we prefer the Gigaworks' understated class.

There's a certain amount of speaker-spaghetti involved, so it's pleasing that the supplied cables are thin enough to be tucked away. The subwoofer is enormous, and you need to set it in a central position to make the most of the cables provided, so getting everything where it's supposed to be might prove difficult. Thankfully stands and brackets are included for mounting the satellites wherever you wish.

What matters most is the sound these things produce, and it's a mixture of fantastic and mildly disappointing. The fantastic bit is when you use them for gaming. Punchy sound, thumping bass and perfect

hail-of-bullets performance augment *Half-Life 2* and *Quake IV*. The woofer is like an unruly teenager, though, lurching awkwardly from thundering tantrums to hushed mumbling at the slightest provocation. This is fine for gaming, but the rumbling is intrusive during movies. Thankfully music performance is excellent.

SOUND OFF

While a set of G500s isn't best suited to general entertainment use, we can't think of a better selection for gaming. You might be tempted by a bigger, 7.1 setup, but it's just not worth it.

Alex Cox

Power 36 Watts RMS per channel, 150 Watts RMS sub

Frequency response 35Hz-20kHz

SNR 85 dB

Woofer 8" long throw

Satellites 3' full range

Inputs Front centre, rear, aux

Cables 3 x 2m, 2 x 5m

Mounting options Stand connector, wall mount keyhole, included feet

81% PCF says... "A sharp and poppy set of cones that work best with games."



ROUND-UP

GATHERING ROUND THE
WATER COOLER

Water cooling is no longer the domain of a select few, with new starter kits appearing all the time.

Alan Dexter steams into action...

Water, electricity and mobs. All in close proximity. How the pioneers of water cooling didn't fill their underwear on a daily basis is beyond us, but we're glad they persevered. Without their efforts, we wouldn't be in a position to exploit water cooling technology today.

Air cooling is all well and good, but when it comes to high-end temperature reduction, there's only so much air that you can throw at a CPU. Water, on the other hand, lets you overclock further, as it's a much better conductor than gas.

Installing water cooling is getting easier, too. All the major manufacturers now offer a box of connectors, pumps, and other gubbins that'll get any modder excited about the prospect of litres of water coursing past his new processor.

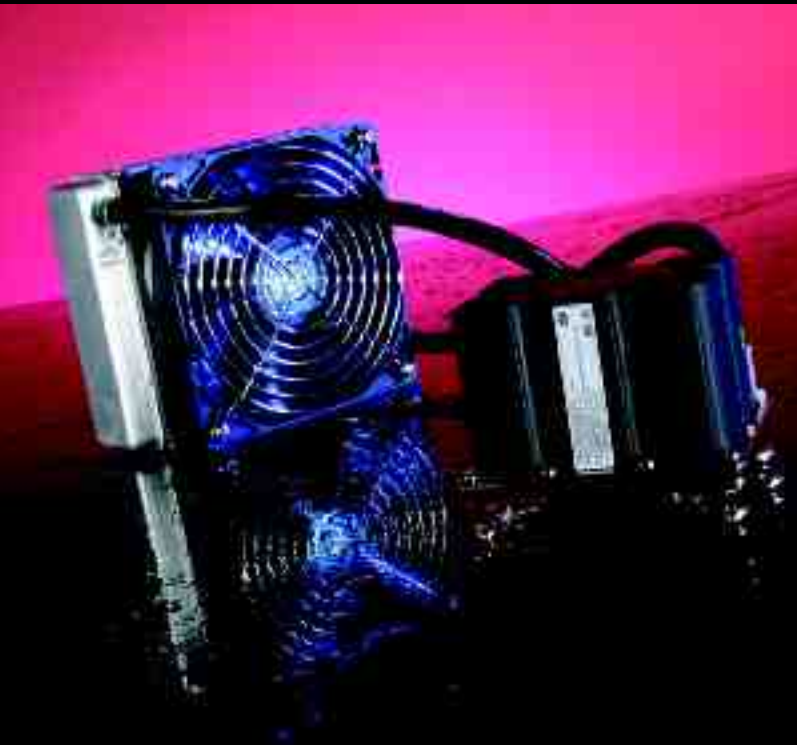
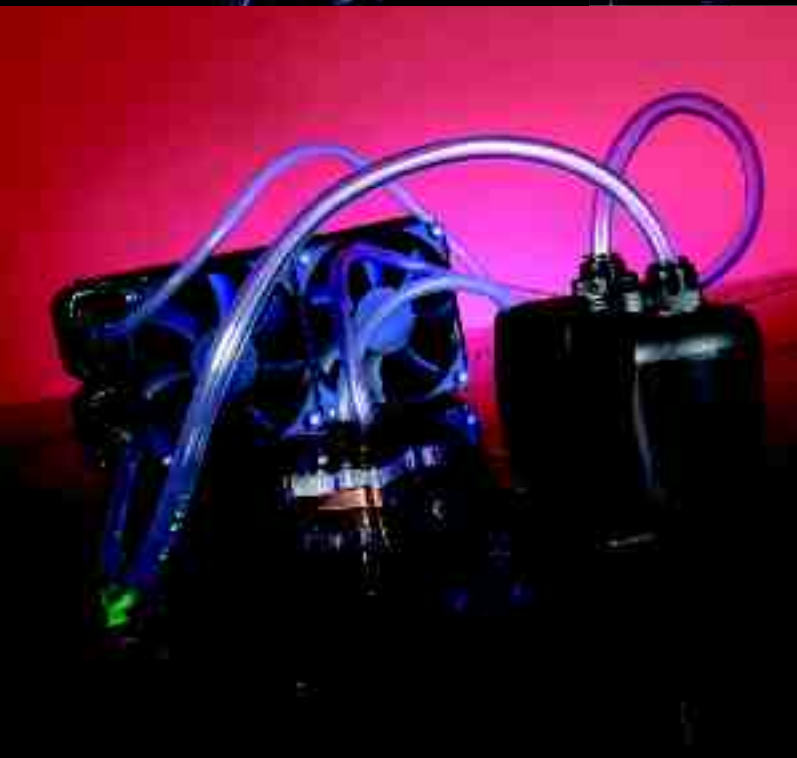
The key to successful water cooling is in the installation process. Fail to follow the directions for flat-pack furniture, and

you end up with chipboard modern art. Start messing with CPUs, mobos and water, and you need your hand holding. It doesn't matter how good the kit is – if you've just killed your PC because of poor instructions, then you could reach for your lawyer. We've taken four of the bestkits and put them through their paces.

HOW WE TESTED

To test these kits we've abused a system built around an Athlon 64 X2 4800+, a chip we don't want to see nailed to the office Wall of Death (currently populated with burnt VGA cards). We tested this chip using a better-than-average air-cooler, which managed to keep it at 33°C when

idle, and 47° when under load. To produce the under-load figures, we used *CPU Burn In*. Another app, *Everest Home Edition* (www.lavalys.com) was then used to check the processor performance after continued usage of half an hour (although for obvious reasons this part of the test had to be monitored).



3D Galaxy LCS

Manufacturer Gigabyte Web www.vadim.co.uk

£75

Gigabyte isn't a name that automatically springs to mind when talking about water cooling, but its Liquid Cooling System should raise a few eyebrows. You even get a fan speed controller thrown in, although it's not easy to install.

Intriguingly, there is a fan that sits proudly atop the CPU block and helps to keep it cool at the source. Purists may scoff at the idea, but it

meant that this kit actually produced the lowest temperature in operation of 43°C.

On full blast, the radiator cooler gets a bit noisy, and it's certainly not the sexiest piece of kit you'll ever see. We also found filling and emptying the reservoir a little too fiddly, although the simple clipping mechanism works well, and we had no leaks or spillages.

Pump 400 l/hr

Radiator 125x197x64mm

Radiator fan 120mm

CPU Intel Pentium 4 (3.8GHz), AMD Athlon FX 59/64 4800+

84% **PCF says...** "Tricky to plumb in, but once it's up and running, this system managed to cool things down admirably. It's not terribly photogenic, though."

WaterChill Xtreme Kit

Manufacturer Asetek Web www.vadim.co.uk

£253

The WaterChill cooler suffers from several problems, but two of them are fundamental. The first is that this is the only kit that we have tested here that managed to stop our hearts (albeit momentarily) by sprinkling its nastily coloured water all over the motherboard, due to slightly malformed piping.

It also failed to keep the processor temperature in check,

causing us to pull the plug on the stressed system once the CPU temperature peaked at over 80°C. It worked when the CPU was idle, but bottled it under pressure.

Having the main pump manual on the CD is just plain hilarious – especially if you've only got one PC. It clearly has potential if you have the patience, but it's not worth the stress, and it's terribly expensive.

Pump 1,020 l/hr

Radiator 273x133x40mm

Radiator fan 120mm

CPU Intel Pentium 4 (3.8GHz), AMD Athlon FX 59/64 4800+

40% **PCF says...** "A range of basic design flaws and poor instructions make this the harem-scarem cooling option. Avoid it if at all possible."

AQUAGATE Mini

Manufacturer Cooler Master Web www.vadim.co.uk

£59

If simple is beautiful, then the Aquagate mini is the cover model of water cooling. Forget your complicated installation, water jugs and kitchen towel ugliness; this is water cooling for dummies. The box contains a closed circuit of processor block attached to the radiator by pre-filled, clipped tubes.

The processor block is far bigger than anything else here, but

that is because it houses the reservoir and pump. There is a problem on this front though, as you need to remove your motherboard in order to install the cooler. It's a shame that the standard cooler clips couldn't be used. Performance-wise this does well, topping out at 43°C when under the heaviest loads. It's something of a bargain too.

Pump 45 l/hr

Radiator 120x160x35mm

Radiator Fan 120mm

CPU Intel Pentium 4 (3.8GHz), AMD Athlon FX 59/64 4800+

79% **PCF says...** "Does the basics well, and installation is a doddle. Performance is also pretty impressive. A good starter kit for modding novices."

Turn over for the winner...



"These kits will get any modder excited at the prospect of water coursing past his CPU"

WINNER!

Reserator1 Plus

Manufacturer **Zalman** Web www.quietpc.com

£187

Most water-cooling kits bundle radiator fans capable of producing enough noise to force most death metal outfits to reach for 11 on their amps. Enter the Reserator1 Plus. Free from such whirling dervishes, this fanless cooler is perfect for silent systems.

The large black tower does the hard work, incorporating a pump, reservoir and radiator, with blocks for CPU and VGA chips enabling a completely silent system. Thankfully

a flow indicator provides feedback, as otherwise, you wouldn't know it was on at all. When it comes to efficiency, it's on a par with our test fan, but with the added benefit of being silent.

The only problem you may have with this system is that the Reserator tower needs to be level with your PC, so you can't have the tower or the PC on your desk; it's neither or both. It's pricey, but otherwise a superb system.

Pump 300 l/hr

Radiator 592x150x150mm

Radiator Fan n/a

CPU Intel Pentium 4 (3.8GHz), AMD Athlon FX 59/64 4800+

90% **PCF says...** "The quietest and most reliable water cooling unit in this test. If you can afford the expense, you won't be disappointed by its performance."

gold
PCFormat

Pocket money pages

WE ROUND UP THIS MONTH'S SUB-£100 HARDWARE



Z22 Handheld

Mobile organisation for those on a budget...

Price £80 Manufacturer Palm Web www.palm.com

PDAs have an image problem at present. If you're considering forking out a couple of hundred clams for one, you'll want something a lot more exciting than a pocket version of Word or Excel, a diary and a clock. Budget offerings like the Z22, though, might do a little to change that.

At under £80, you get most of the core functions of the more expensive handhelds for a fraction of the cost. The bright screen is clear and the menus are easy to navigate. The Graffiti 2 system of writing is responsive too and can keep up with all but the fastest of scribes. The Z22 also stores pictures, but with only 20MB of space you're not going to be showing many.

There's no Bluetooth, but there is infrared, allowing you to swap entire mobile phone contact lists in a trice. The battery life is not to be sniffed at, running for an entire week without a recharge, and there's also no delay while it boots its OS. The lack of Bluetooth or expansion slots aside, this is a nice little machine offering PDA functionality to budget users.

Display Touchscreen, 160x160

Memory 20MB useable space

Processor Samsung 200MHz

OS Palm OS Garnet v5.4

79% **PCF says...** "Very basic PDA, easy to use and pretty cheap."



d_skin Protect Disc Skins

Price £5 for five Manufacturer d_skin Web: www.dskin.net

We remember *Tomorrow's World* where Maggie Philbin, or someone, told us of the new-fangled 'compact disc'. We were assured that, though vinyl got horribly scratched and lost sound quality, it wouldn't happen to these incredible CDs.

Thankfully for d_skin this wasn't true. CDs get scratched, and if you're not well versed in backing up, you could lose important and costly discs. The skin is a protective cover you slip on the disc that stays there until it gets too scuffed to read through. You can read and even write through the cover, although in some slim line drives it can get jammed.

73% **PCF says...** "Pricey, but good for saving valuable originals."



Classic Webcam

Price £25 Manufacturer Hercules Web europe.hercules.com

Thinking about it, do you really want everybody to see you when you phone them up? It could cause all sorts of trouble when you're trying to skive off work or fib to the missus. There are advantages too though: you can get all artistic with videos and play around with instant messaging too.

This kit gives you all you need to get creative. The camera itself is solid; the base is heavy enough to sit comfortably on the desk and the clip is sturdy enough to attach to an LCD monitor. There's a raft of software on the disc too, which lets you tweak pictures, edit video and send them both to your buddies.

78% **PCF says...** "Kind of square, but a solid starter pack."



LArrobe

Price £25 Manufacturer be.ez Web www.be-ez.com

Originally the LArrobe series was designed specifically for use with diddy Mac notebooks, but they've realised that lots of people have slightly chunkier (but obviously better) PC based laptops. It's stylishly designed, though unashamedly Mac-ish, with a shape-moulding material hugging your machine to keep it safe.

There's no space anywhere for peripherals which is short-sighted. Let's be honest, anyone with a laptop wants to take their power supply, a few discs and probably a mouse when they go mobile. There are no straps either so it's only something to wrap your laptop in to stop it getting scratched in your suitcase.

59% **PCF says...** "Definitely style over content."



Guardian 450W Gaming Case

Price £35 Manufacturer Guardian Web www.bargainet.co.uk

All the hip kids have their perspex-sided cases, neon under-lit and with lowered suspension. They've spent lots of money making their obsolete system look shiny. Now you can make your rig dazzle for half the price. Well, you can make it look plastic and flimsy anyway.

It's a bargain case so don't expect the screwless uber-design of the upmarket boxes, but it has got a decent dual fan 450W PSU. It is cheap, though, and not just in price. The drive access door on the front doesn't look long for this world and the USB panel will probably follow it into the bin.

69% **PCF says...** "A bargain, but flimsier than novelty panties."



Think Outside Stowaway Keyboard

A keyboard with all the keys, but none of the calories...

Price £70 **Manufacturer** Think Outside **Web** www.widget.co.uk

Quite the slim Jim, this fold-up keyboard is designed for PDAs and Bluetooth-enabled devices. Installation is simple; just pop the disc into your PC to install the drivers to your mobile device. Fire up your PDA, turn the keyboard on, link the two devices together, and you're ready to use a full-size keyboard anywhere you like.

We tried to use the keyboard with the new Dell Axim X51V, but the relevant drivers weren't supplied. You also need to go through the linkup process every time you use it. Still, these are relatively minor concerns.

The most impressive aspect of the keyboard is the level of design involved. You'll love the pop-up PDA dock, and the way it folds into its own protective shell, ready to be stowed into the supplied slip-case. It's pleasing for all the reasons you watched Inspector Gadget as a youth, and practical, too; a folded Stowaway Keyboard and PDA take up less space than a paperback. While it's not exactly cheap, it is pretty darn useful.



Raptor-Gaming P1

Price £10.35 **Manufacturer** Raptor-Gaming **Web** www.raptor-gaming.com

The ill-informed say that Germans have no sense of humour, but we have irrefutable proof that they are wrong. This mouse mat from German manufacturers Raptor-Gaming came described as a high-precision gaming pad. Now, unless the game in question is 'move the cursor around the screen in as erratic and uncontrollable a manner as possible' this could well be classed as a joke.

It most definitely is a very fast running pad and the mouse glides along like it was on a cushion of air, but it might as well be for all the precision you get out of it.



Nomads' Mini Pack 1

Price £17 **Manufacturer** Thrustmaster **Web** www.thrustmaster.com

Realistically the numeric keypad has never been the biggest problem with mobile computing. How often have you sat there with your laptop wishing you had a keypad rather than an upgradeable 3D card? Not very often we expect. When you're totting up your accounts though, it can be a pain in the posterior.

The Nomads' solution is simple and does its job well, despite the dead action on the keys. The mini-mouse is an odd one though. It won't function on any surface that isn't covered in material, which isn't much help on most table tops. It is, however, the most precise mouse we've ever seen used on a leg.



Audiostar

Price £100 **Manufacturer** Packard Bell **Web** www.packardbell.com

Everybody's making MP3 players these days, so most manufacturers are trying to cram loads of features onto their attempted iPod-beaters. This little fella tries to shout about its TFT screen, voice recording and video playback, but then so does every player around £100.

There's nothing to really set this apart. The 1GB of memory can be used like a USB key, but that really isn't anything special either. The controls are fiddly and it takes an age to navigate the chunky menus. Video playback is pretty redundant too, only using two thirds of the visible screen and converting video files to play doubles their size. Not good.

Long term test

RATINGS BEYOND THE WARRANTY



Microsoft Wireless Intellimouse Explorer

So I've had one of these for two years now, and it hasn't gone belly-up on me once. And until it does, which I half expect to be never, I simply won't need a replacement. It really is one of the best buys I've ever made for my PC. Twenty five quid well spent, then. The first time I got it out of the packaging, I thought it seemed a bit too light; it's always nice if your mouse has a bit of weight in it, as it really improves the feel. But after popping the two AA batteries in, it became perfectly balanced. And it really makes the best of those batteries. I must have replaced them, what, three times in the last couple of years? It's obviously hugely efficient – which is more than you can say for many third-party squeakers. Best of all, it never misses a beat. Sure, it's not quite as quick as a good wired mouse, but I'm no FPS virtuoso, so that doesn't really matter to me. It's nearly as quick, pin-sharp in the accuracy department, and my right hand loves it. When I'm in the office, I use a wired Raptor Gaming Mouse, which is definitely sharper and quicker – but still, I prefer the wireless freedom of the Intellimouse. Nuff said. **AI Bickham**

15% **PCF says...** "Did they test it at all, or is that the joke?"

70% **PCF says...** "Good pad, but the mouse is literally laptop only."

57% **PCF says...** "The controls are clunky and the video's lacking."

We want your reviews... of still-hoved old kit: al.bickham@futurenet.co.uk

ROUND-UP

Paul Hudson examines the latest crop of Linux distros. Which one is right for you?

Thinking of ditching Windows entirely? You wouldn't be the first. Many have experienced the benefits of choosing Linux over Microsoft's expanded, bloaty monster of an operating system. For the most part, a Linux distro can do anything windows can do: email, web-browsing, graphics packages and so forth. About the only thing Linux is less suited to is running games.

SAFE AS HOUSES

The benefits go deeper than simply flag-waving your support for open-source software development, though. Linux is far more secure, as it doesn't have all the security loopholes that are found in *Internet Explorer* and other MS apps. To put it plainly, you're very unlikely to get spyware and viruses on Linux.

However, you should be prepared for a little legwork. Even the most simple and visually appealing distro will take a little getting used to, and things won't work as you remember them on Windows. Also, some distros require a measure of fiddling round to get the very best out of them. The more complicated distros definitely aren't

recommended for beginners. That said, some distros, such as Linspire, are custom-built to make the transition an easy one.



DISTRO FEVER

SUSE 10

In the beginning, there was Linux. Now there's SUSE

Price £38.95 Publisher Novell Web www.novell.com

gold
PCFormat



The support for both 32 and 64-bit processors ensures that you will make the most of your hardware's capabilities.

This has long been known as the distro that combines the haywire nature of open source with a ruthless German efficiency, but it's only since the distro's purchase by Novell that it has started to really gain ground. Whereas it

used to be about stable and mature software (read: old and dull), you'll now find it has more features than any other distro out there.

The traditional way to get SUSE is to purchase a boxed copy. For your £40 you get five CDs, a dual-layer DVD, plus a fat manual to hold your hand through your early experimentation. The discs include both the 32 and 64-bit versions of SUSE, so you can squeeze the most from your shiny new Athlon 64. However, recently SUSE opened up the www.opensuse.org website, where you can download its distro free of charge. The application choice is slightly more limited, but we'd wager that most people couldn't tell the difference.

LATEST SOFTWARE

At this point, SUSE 10.0 is the leading Linux distro if you're interested in trying out the very newest in free software. SUSE spearheaded OpenOffice.org 2.0 in the previous release (9.3), and you'll

DISTRO INFERNO

Mandriva 2006

The former hotshot has fallen slightly by the wayside

Price Free Publisher Mandrivasoft Web www.mandrivalinux.org

top
gear
PCFormat



The Mandriva desktop environment ranges from being slightly busy to horrendously cluttered. Linux neophytes beware...

Up until Mandriva (née Mandrake) 10.1, this was the finest Linux distro around. The company who put the distro together targeted it firmly at home users looking to switch from Windows to Linux and get

a measurable boost in space, security and features. The plan worked, many people used Mandriva and the world was a good place to live. But then Mandriva announced it was switching to a yearly release, aiming for a more stable desktop and thus targeting the corporate market. Since then, this once-proud distro has fallen behind with new features, see-sawed between pleasing corporate types and pleasing home users, and never really found its feet.

COMPLEX AT FIRST SIGHT

Mandriva uses KDE as its default desktop environment, and it comes with features leaking out of every button and window. This is good if you're familiar with Linux, otherwise it's likely to scare you back to Windows pretty quickly.

Like SUSE, Mandriva has a 64-bit edition available, but the general look and feel is more cartoony and less refined. The boxed edition will set you



find it stable and ready to use in this release. Along with a collection of smaller, less well-known window environments, SUSE also provides KDE 3.4 and Gnome 2.12, which are again the very latest releases. SUSE had been testing these versions for months before shipping, which means they should be as reliable as you'd expect from Linux.

SUSE also ships with *Beagle* enabled out of the box, which is a search tool similar to Apple's *Spotlight*. Here you can search for a given word, and *Beagle* will sniff out any references to that word in files, emails, IRC logs, web history and other places, then present all the results in one window for you to sift through.

Needs 1GHz CPU 128MB RAM

Wants 1.5GHz CPU, 256MB RAM

92% **PCF says...** "As distros go, SUSE is the fastest, easiest and most powerful bar none."

back more than SUSE for an equivalent software set, and the documentation included doesn't match up to the SUSE yardstick, so we recommend you snag the free version from the Mandrive site.

The highpoint of Mandriva continues to be its excellent support for Windows emigrants. With Windows installed, Mandriva will happily resize your hard disk to make room for itself, then make your Windows files available under Linux. Some other distros do this too (most notably SUSE), but none have done it for so long and so well. The distro market ebbs and flows, so Mandriva might see a comeback in the future. But with this release having to last a year, we're not holding our breath...

Needs 1GHz CPU, 64MB RAM

Wants 2GHz CPU, 256MB RAM

83% **PCF says...** "Great for absolute beginners, but doesn't stop you shooting yourself in the foot."



Ubuntu 5.10

Price Free **Publisher** Canonical Software
Web www.ubuntulinux.org



Lots of people find it hard to believe that Linux is completely free, but get this: the people who make Ubuntu will actually pay for a copy to be sent to you if you ask for it. No costs to you, and no questions – you can even order several, and hand them out to friends and family. They can afford to do this because the backing company, Canonical, is owned by Mark Shuttleworth, the second 'space tourist' who paid the Russians to fly him up on a rocket.

Ubuntu continues on to break several other distinctive trends of Linux distros. For a start, it comes entirely on one CD (and our cover DVD) so there's no huge download. It also has a distinct, uniform look and feel, unlike the mongrel KDE/Gnome approach taken by many other distros. However, the installer is wholly text-based, there's a small selection of software as a result of it coming on one CD and there's a shortage of configuration tools.

Needs 1GHz CPU, 128MB RAM

Wants 2GHz CPU, 256MB RAM

82% **PCF says...** "Fast, free and well supported, but not the ideal choice for beginners."



Linspire

Price \$49.95 **Publisher** Linspire
Web www.linspire.com



When Linspire was released, long-time Linux and Unix users lambasted the company for abolishing the strict security roles that make Linux rock-solid, for daring to ask for payment and for the original company name: 'Lindows'.

When dust settled, Linspire became a haven for newcomers wanting their computer to look and work as it did, just without being a virus petri dish. Sure, you might feel sheepish at your local Linux User Group, but can brag about how you installed your OS in four clicks, how you can install software without arcane command-line instructions, how your menu bars aren't clogged with submenus.

Using Linspire, you can shop for software using the Click N Run service. For \$49.95 a year, you can download all the free software you want, but the important thing is that the installation process is easier than anything else on Linux, or even Windows or OS X for that matter.

Needs 1GHz CPU, 128MB RAM

Wants 2GHz CPU, 256MB RAM

79% **PCF says...** "A great Windows replacement, and a solid stepping stone for first-time users."



Gentoo

Price Free **Publisher** Gentoo
Web www.gentoo.org

Ever since the 386, released 20 years ago, Intel-compatible x86 chips have used roughly the same 32-bit architecture. As a result, many operating systems, including Linux and Windows, are optimised for the lowest common denominator CPU so that they run on virtually anything; if you have 32-bit Windows XP on an Athlon FX-55, the code is largely optimised for less powerful chips. To combat this, the Gentoo arrives as source code, and compiles to be specifically optimised for your kit.

Sound good? Well, for sheer performance, it is. However, compiling can take a long time. Days, in fact. Sure, at the end of it all you'll have a distro that squeezes every last drop of performance from your PC, but will you really notice? Probably not. Gentoo is complicated to install and pointless if you just use a 64-bit competitor. It has an active user support base, but by God does it need it...

Needs 500MHz CPU 64MB RAM

Wants 3GHz CPU, 1GB RAM

40% **PCF says...** "Only free if your time is worth nothing to you whatsoever."



Fedora

Price Free **Publisher** Red Hat
Web fedora.redhat.com

A few years ago, this distro was released under the widely recognised Red Hat Linux tag and sold in places such as PC World. Like Mandriva, Red Hat opted to re-invent itself as a corporate-focused company, and actually did a good job of it. The home-user distro was spun off into a free project called Fedora, and used as the basis of development for Red Hat Enterprise Linux, which is packaged with support and sold for pots of cash.

Although Fedora installation is easy enough, dual booting with Windows is very hard unless you had Windows carve up your hard disk in advance. The pains don't end once you're onto the desktop, either – there's a noticeable lack of configuration tools, and the few there are seem to be for advanced users. One advantage of Fedora is that there are technical books available to aid installation and configuration, and no other distro here can boast that.

Needs 1GHz CPU, 128MB RAM

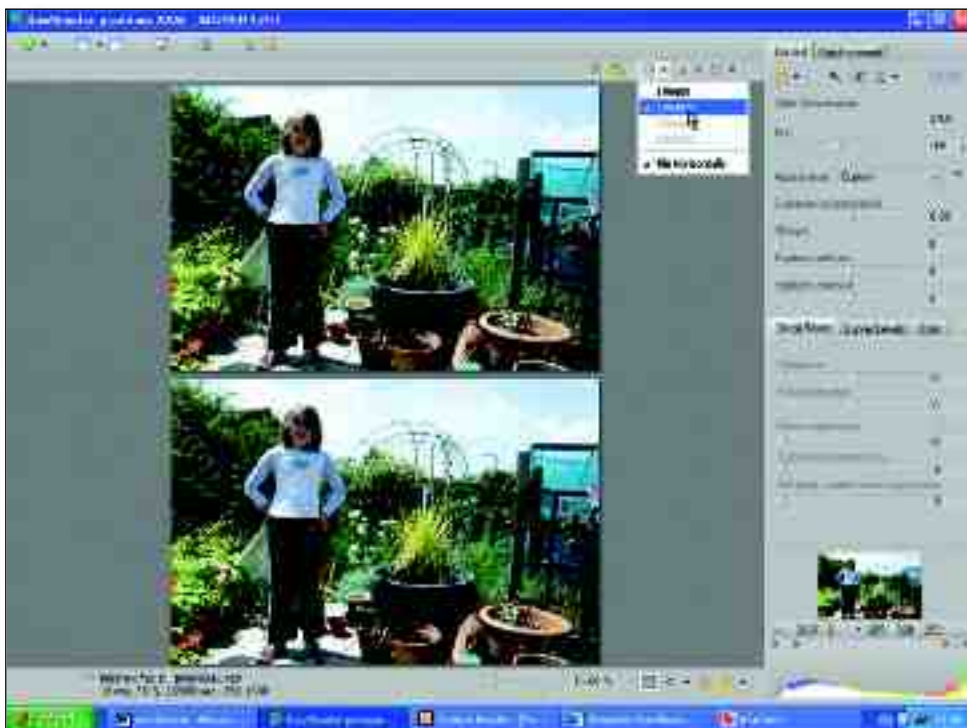
Wants 2GHz CPU, 256MB RAM

74% **PCF says...** "Not for absolute beginners, and not easy even for those experienced with Linux."

Pull down the Processing Parameters box and you'll find a palette of useful editing tools.



Cropping is a vital tool and this program gives you an unprecedented degree of control.



A new 'RAW vs RAW' feature enables you to magnify and compare similar shots.

RAWShooter Premium 2006

Make the most from a digital SLR and shoot in RAW – but also be sure you've got this versatile program, to get the best result possible from your photos

Price £60 Publisher Pixmantec Web www.pixmantec.com

Being able to shoot photos in RAW format is now a key selling point for a digital camera, and it's a feature that has filtered down to better quality compacts from SLRs. The biggest advantage of shooting in RAW is that you hang on to all of the original picture information, and get a photograph that is much closer to what the camera actually 'sees.'

Compare this with the popular JPEG format, which uses a lot of compression. Using JPEG keeps file size down, so happy snappers can squeeze more shots onto their memory cards, the downside is a loss of finer detail; it's a bit like comparing a typical MP3 track with a high-quality vinyl recording. Editing and managing RAW images has been a bit of a black art up until now, but Pixmantec's software has made the job a great deal easier. The flagship program is the recently released *RAWShooter Premium 2006*.

As a relatively cheap power tool for working with RAW, the program is hard to beat. It's a compact, economical solution that installs quickly and instantly recognizes any RAW images stored on your PC or connected devices. All types

YOU SHOULD ALSO CONSIDER...

- >> **Photoshop CS**
Adobe
- >> **Media Studio Pro**
Ulead
- >> **PaintShop Pro**
Jasc

"Pixmantec's software has made editing RAW files easy"



of RAW files from popular camera makers are recognised, and the editing toolkit is fast and easy to use.

RAW POWER

A big selling point of this new version is RAW vs RAW comparison, which enables up to four images to be compared on the same screen. Magnification up to 800% enables you to find the sharpest, best exposed image and dump the rest. New editing tools include an excellent

(and self-explanatory) Horizon Straighten tool, and the essential Crop facility, which works either freehand or to set aspect ratios. Meanwhile, Vibrance emulates the punch of high saturation

slide films by applying saturation only to areas where it is needed, while Colour Balance allows a colour caste to be applied to an image, producing an effect comparable to a lens filter. It's fast and fuss-free, and *RAWShooter* works in such a way that the original RAW files are not altered unless you choose them to be.

The noise reduction tools have been overhauled, too, which will make this

program useful to owners of budget SLRs as well as those with fancier tackle. While no app can totally make up for the shortcomings of your camera's sensor, *RAWShooter's* pattern noise suppressor goes a good job of removing the worst cases of grain and speckle that afflict images from time to time. There's also a tool called the hot pixel suppressor to help photographers who use much longer exposures, such as landscape or panorama photographers.

The program is a great time saver, too. The batch download, conversion and file management tools are considerably better than the RAW software you get with your camera, and a new Personalized Appearance function enables you to save a combination of similar corrections, which can be applied simultaneously to a large number of shots. If you're work with images, you can't go wrong with this. **Geoff Harris**

Needs 512MB RAM, Windows 98 or higher

Wants 1GB RAM, Windows XP

90% PCF says... "The interface takes some getting used to, but this is a really powerful toolkit."



MOVE YOUR STUFF

Laplink PC Mover 4.0

The return of the data migrator

Manufacturer Laplink Price £35 Web www.laplink.com

Constructing PCs is an occupational hazard for technical monkeys like us, so it's nice to see an app that's designed to help you shift content from one hard drive to another. You simply install it on the old PC and the destination computer, then move any programs, settings and data you want to the target computer using the supplied USB 1.1 cable. Why the system doesn't use USB 2.0 is beyond us, but though it's not as quick as it should be, it works fairly well.



We had a spot of trouble with a couple of programs, but nothing a bit of fiddling couldn't sort out.

However, you have to ask yourself if you really need it. If you've a portable USB hard drive, you can move all your data, emails, internet favourites and so on from one PC to the other without the inevitable faff of getting your head around a new app. Admittedly, *Laplink PC Mover 4.0* goes one better and shifts full installations too. But if you've got these on CD or DVD already, you'll save money simply by reinstalling them on the new PC. Those are the facts... the choice is yours.

AI Bickham

Needs 200MHz CPU, 16MB RAM

Wants 600MHz CPU, 256MB RAM

80% PCF says... "A handy app, but a bit expensive for occasional use."

SYSTEM OPTIMISER

Registry Mechanic 5

Scan, sort and optimise your Registry

Price £20 Publisher PC Tools Software Web www.pctools.com/registry-mechanic

Depending on your point of view, fixing problems with the Windows Registry is either a complete pain in the arse, or a complete and utter pain in the arse. All hail Registry Mechanic, then, which scours the depths of the Registry so you don't have to.

Over time, the Registry gets hopelessly messy. Programs uninstall but leave bits of debris, Windows expects to find fonts you no longer have, configuration options get confused and the registry itself becomes bloated,

which can have a disastrous effect on your system speed and stability. By whizzing through the Registry to find and fix such problems, Registry Mechanic can make Windows happy again. It can also compress the Registry for better performance and monitor your system on start-up to find and fix problems as they occur.

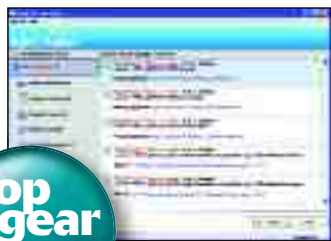
It's fast – it found and fixed 402 problems on our PC in seconds – and there's a backup option in case something goes horribly wrong. At £20 it might seem a little pricey, but it made our system sing.

Gary Marshall

Needs 16MB RAM, 7MB disk space; Internet Explorer 5.5 or later

Wants Windows 98 or later

89% PCF says... "It's intuitive, and speeds up your PC. What's not to like?"



DATA ENCRYPTION

Steganos Security Suite 2006

Most security software protects your PC; this protects your privacy

Price £48 Manufacturer Steganos Web www.steganos.com

This security package is designed to protect your privacy, not your PC. You don't get a firewall or antivirus protection, but you do get anti-spyware and a range of security programs designed to cover your tracks and protect your personal data from prying eyes.

Security Suite also takes care of encryption. It uses the ultra-secure 256-bit AES encryption standard, and you can encrypt an unlimited amount of data using the *Safe Drive* software. This can be password protected or, if you want even more security, you can use removable media such as a USB pen drive as the "key" to unlock your data. There's also a Portable Safe feature that uses the same encryption, but this time encrypts data on CD, DVD or USB memory sticks, and you can also send encrypted emails that the recipient can decrypt without installing any extra software.

In addition to data encryption, *Security Suite* can wipe any traces of your internet activity, encrypt your passwords and fill in forms automatically, and it can also store any sensitive favourites in a password-protected area to stop people knowing what kind of sites you like to visit – handy not just for dodgy stuff, but for sensitive

subjects such as debt advice, health information and so on. You also get a nifty Stenography feature, which you can use to hide sensitive information in BMP, WAV or JPEG files, and a program to hide your IP address from the websites you visit.

STAY HIDDEN ONLINE

The final piece of the jigsaw is a neat little application called *AntiTheft*. This sends regular pings to Steganos' servers, and it generates a unique ID for your PC. If your PC is then pilfered, you can log in to the *Steganos AntiTheft* website, enter your unique ID, and see any IP addresses that have recently been used by your missing machine. Steganos doesn't guarantee that you'll be able to trace the culprit, but it assures us that *Security Suite*'s IP spoofing won't affect the *AntiTheft* data. If the authorities are tech-savvy it could make recovering your PC much easier.

Gary Marshall

Needs 40MB RAM, 600MHz CPU 27MB free disk space

Wants 60MB RAM, an NTFS-formatted hard disk

85% PCF says... "A powerful program for the paranoid web surfer."

"The conflict of opinion over the previous games becomes the internal conflict of your character."





"Oh, bloody hell. Here comes Mr Princey-pants to spoil everything."

ANTIQUE PERSIAN THUG

Prince of Persia The Two Thrones

Since they can't turn back time, it would be nice if they'd changed a single thing

Price £35 Publisher Ubisoft Developer Ubisoft Montreal Web www.princeofpersiagame.com

Ubisoft has been very clever. Opinion divides interestingly on the previous games in the modern *Prince of Persia* franchise. Some think *Sands of Time* was a wonderful new way to experience third-person action gaming, celebrating its focus on gymnastics and tongue-in-cheek behaviour, and that its sequel, *Warrior Within*, was an over-serious and combat-focused anticlimax. Others think that *SoT* was clumsy and flawed, the combat clunky and out of control, the attitude too silly, while *Warrior* was the original idea made strong, with fluid combat and a far more focused and mature story. Pick a side.

The story so far has seen the Prince of Persia unleash the Sands of Time – a time-controlling substance. The plan then was to reverse time so that it all unhappened. This really pissed off fate, who planned to kill the Prince, forcing him to live life on the run. To undo the damage, he went back in time, again, to prevent the Sands from being created. And like the plot of all bad time travel flicks, the Prince should have learned that changing the past never works.

Keeping up? Now in *The Two Thrones*, upon returning to his home,

Babylon, the Prince discovers that all is not well. The Maharajah, from whom he originally stole the Sands (and killed at the end of *SoT*), is now alive again, and has himself found the Dagger of Time. The Maharajah kills Kaileena (oh, sorry, The Empress of Time, forgot her) unleashing Sand into everyone present all over again, but this time infecting the Prince himself. What a to-do.

And this is the clever bit: Infected by the Sand, the Prince of Persia in *The Two Thrones* develops a dual personality, and with it, two different forms. The original voice of the Prince, Yuri Lowenthal, returns to speak for the regular Prince, while Robin Atkin Downes, the

ON THE DVD

>> Screenshot gallery



BUY THIS IF YOU LIKE...

- >> *Prince of Persia: Sands of Time*
Ubisoft
- >> *Tomb Raider series*
Eidos
- >> *Beyond Good & Evil*
Ubisoft

Sounds good

Ka-ching! Thwack! Thock, thock, SPLAT!



While somewhat hard to illustrate with a screenshot, *Two Thrones* continues the *Prince of Persia* series' penchant for excellent sound. So much of the feeling of contact with your environment is born of perfect aural response, never better than in the awesome clang of two swords meeting.

replacement miserable goth voice in *Warrior Within*, plays the Dark Prince. Both voices live within the same head, and bicker constantly. Out of control, the Prince switches between regular and Dark, as he leaps through the levels. When in regular form, all reminds of *SoT*, but as the Dark form it's much more reminiscent of *WW*. The conflict of opinion over the previous games becomes the internal conflict of your character. It's an unmistakably smart meta-criticism of the series.

TRIPLE AXEL

Prince of Persia does acrobatics really, really well. There's not another game in existence that offers the same visceral, intuitive communication between player and environment. If you're a seasoned player of the series, you will instinctively scan a room and spot the pathway. A distant shelf is a simple wall-run away. From there, leap backward, catch that beam, swing onto the pole, slide down halfway, leap, bounce, grab the ledge, drop, bounce, bounce, bounce between the two walls, run up the facing facade,



Compared to the ladies who appeared in *Warrior Within*, she's enormously overdressed.



As ever, dark or evil people look about forty-seven times cooler.

and roll deftly under the rapidly closing stone door.

But oddly, this is where *TTT* begins to lose you. The wonderful hook of the *PoP* series remains the ability to rewind time, but it should never let you see forward in time. The series has so appealed to the acrobatic-junkies thanks to that feeling of inspired improvisation. You'd see a ledge, have a go, experiment by jumping to the next bit, and so forth. If you ever went back, you'd realise that there was only ever one route. But the important thing was: you didn't know at

the time. Ubisoft has entirely forgotten this. It feels hollow, prescribed. You've been here, and done this.

This, however, isn't enough to take away the fun of executing a perfect series of moves. And for the first time in the series, the same goes for combat.

IMMORTAL COMBAT

Warrior Within introduced 'freeform' fighting. Where *Sands of Time* had you repeating a number of simplistic moves, *Warrior* let you combine unique flurries. That clever bit again: this time, when playing as the Prince, a hugely improved version of the orderly *SoT* fighting kicks in letting you feel methodical and in control. Turn into the Dark Prince, and, with the aid of a chain-sword (like the scary girl in *Soul Calibur*), it becomes a crazed frenzy of violence and death, made more frantic by his ever-decreasing life-force. Whichever form is used, it's still markedly improved. And with the additional Speed Kill ability (see Danger: Speed Kills), combat is no longer a bone of contention. Also better is the camera – murderous in *SoT*, deeply frustrating in *Warrior*, here it's merely a niggling pain. No longer are you forced to view fights from behind pillars; the ability to refocus the view nearly always available.

What, however, has not been improved, and boy does the score go tumbling down here, is the glitchy engine. Time, as the Prince knows too well, isn't forgiving, and three years ago we were prepared to accept the odd buggy death in order to play through this brand new experience. Two games later,

Fill in these forms

The Sands of Time they are a-changing



1 You'll forgive him for looking a little surprised. Things start to get strange for Mr Of Persia when he's infected by the infernal Sand that has haunted his every move since *Sands of Time*. His arm gets a bit, well, barbed, and provides an impressive glow. Very useful for seeing in the dark. Seriously.



2 Things get a bit more odd when the peculiar infection takes complete control of our antihero. Taking on the form of the Dark Prince, who looks somewhat like an explosion in a Japanese cartoon factory, his strength and agility increases hugely, at the cost of ever decreasing health.



3 But wait a moment! Who's this mysterious female? She seems awfully familiar. Could, by any chance, the return of a certain lady-friend be enough to focus the mind of our dear Prince, and give him a chance to reconcile his internal conflict? Yeah, like girls ever help with that.

UP CLOSE LEAPS AND BOUNDS



Life's a beach

The latest meter for life, available sand, and rewindable time is the tidiest and clearest it's ever been.

Magazine hand

Your non-dagger holding hand (fnarr) can pick up dropped enemy weapons. They don't last long, and this gauge lets you know when to replace it.

Hole in the wall

This is where the Prince is ultimately aiming for in this scene. Solving such pathway puzzles is really what this series is all about.

Flinger Prince

Worst pun ever. Sorry. Here he's leaping for that column, and then backwards onto the beam on the left.

The bell toils

'Crate' puzzles, are somehow not annoying. This bell will give the Prince the boost he needs to run up the wall to the opening.

"The combat becomes a crazed frenzy of violence and death"

no such forgiveness is on offer. The same clipping problems, the same innumerable moments when the Prince jumps to his death in the opposite direction to the one you chose, the same enemies able to hit you without actually attacking, and now some added texture woes when drawing water. When a toddler draws on the walls, you forgive his confusion. When a teenager does it, the police get involved.

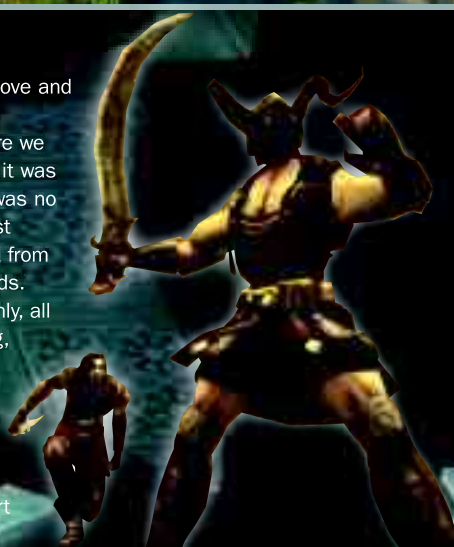
BOSS HOG

Most devastating are the stupid errors in judgement. Bosses are annoying at the best of times, but both previous games knew that the real boss was the environment. Why bother spending half an hour chipping away at some boring baddie, when you could be challenged to scale the outside of a huge tower? Two *Thrones* has completely forgotten this, and while some bosses remain satisfying tests of ingenuity, one section in particular was unforgiveably poor. Taking us an embarrassing and deeply hateful three *hours*, it came at the end of one of two ridiculous chariot riding sequences. When will games ever learn? Dear All Developers, STOP including crappy, under-developed mini-games, and pointlessly hard, brain-numbingly boring

bosses. Lots of love and hugs, *PCFormat*.

So angry were we that, by the time it was defeated, there was no elation or joy. Just numbness, apart from our claw-like hands. And then, suddenly, all is joyful bouncing, jumping and chopping again. Silly game.

Talking of silly, it's a great pleasure to report



Danger: speed kills

It's a Stab Stab Revolution



Newly implemented is the **Speed Kill** ability. Taking its lead from *God of War*, sneaky stealth kills are executed by hitting the attack button at key points during an animated sequence. They are the reward for carefully approaching enemies without alerting them, and very satisfying they are too.

that the po-faced seriousness of *Warrior Within* has been excised, and in fact is endlessly spoofed by the funny and self-aware dialogue. For example, the Prince grumbles, upon picking up his first measly weapon, "Why is it that every time disaster strikes, I find myself without a proper blade?" Towards the end, the returning character notes that there's a lift they can use. The Prince retorts, "Wonder of wonders, it appears to have stopped working."

But there's a sting to such remarks, and it's the awareness that yes, this is just the same old routine repeated once more. A couple of new fighting moves, does not create a revolution. It's still the same *PoP* acrobatic entertainment as before, but then, it's also only the same *PoP* acrobatic entertainment as before. If you see what we mean. **John Walker**

Needs 1GHz CPU 256MB RAM, 64MB 3D card

Wants 1.5MHz CPU 512MB RAM, 128MB 3D card, gamepad

Net gaming None

Discuss pcformat.co.uk/mag/princeofpersia

79% **PCF says...** "Witty and athletic, but ultimately we've seen this all before."



Your crew toil ceaselessly in heavy seas. Brutal naval discipline is the key here.



Tacking frequently causes the boat to lean perilously close to the water. It's great fun.



PCFormat's attempt to beat Ellen MacArthur's record ended in briny chaos.

SALTY SIM

Virtual Skipper 4

At last! A racing game for people who like fiddling with halliards in their spare time

Price £35 **Publisher** Focus **Developer** Nadeo **Web** www.virtualskipper.com

Don't know your jibbing from your tacking, or your spinnaker from your jib? Well, fret not. You don't need much knowledge of the art of sailing to get on with *Virtual Skipper 4*. All that gubbins is in the tutorial. What you need to know is this: it's one of the most refreshingly and gently pleasing games we've seen in ages.

The biggest visual triumph of the game is the rendering of the sea. It's a glorious sight to behold, whether you're beating into a Nordic gale in a tall-masted offshore racer, or cutting across glassy seas in a trimaran to the splendour of a tropical sunrise. As you can see from the shots here, the level of reflectivity is immense – every light-source skitters on countless wave-tops, and those waves stretch from slight ripples to huge rolling swells that your ship see-saws over. By comparison, the ships look merely fine – nothing special, with fairly simple textures and sailor models, but they do the job required.

Your only form of propulsion is the wind, and that's where the important sailing stuff comes in. You have to catch it from the right angle, using the right sail, and as no sail allows you head

directly into the wind, you find yourself tacking furiously to reach each waypoint.

LAND HO!

This is where the game, like real sailing, becomes really challenging. When you start calculating the tacks you need to perform to hit a waypoint, and which sails to change to when you've rounded it, things become deeply involving and extremely rewarding.

Of course, if sailing interests you not a jot, then *VS4* will struggle to hold your attention. But if you've played previous

ON THE DVD

- >> Playable demo
- >> Screenshot gallery

BUY THIS IF YOU LIKE...

- >> *Virtual Skipper 3*
Focus
- >> *Sid Meier's Pirates!*
2K Games
- >> *Silent Hunter III*
Ubisoft



Hoist the jib!

All aboard the good ship *PCFormat*



First, download DXTBMP from fly.to/mwgfx. With this, you can unpack the sail and model skins (which are compressed bitmaps) in the root folder, import them into a paint program, alter them, and repack them using DXTBMP. Put the files back in the root folder and hoist your new sail.



Virtual Skipper games, or feel the salty draw of the sea, there's much here to enjoy. The campaign takes you to races around the globe, in all weather conditions. Each venue holds its own challenges, from the flat beauty of the Adriatic to the rolling threat of the Atlantic. Facing these conditions in multiplayer is good fun, not to mention a piece of cake to set up – you hit multiplayer, choose a username and password, log on to the *VS4* server, and drop into a race. The sight of 20 ships jostling for position is a one to treasure, and cutting through the waves, neck-and-neck with other people is top fun. *VS4* isn't for everyone, but if you've even a little bit of the seafarer in you, there's pleasure to be had here. **Al Bickham**

Needs 500MHz CPU, 64 MB RAM, 16MB 3D card

Wants 2.4 GHz CPU, 1GB RAM, 256MB 3D card

Net gaming LAN/Internet

Discuss pcformat.co.uk/mag/skipper4

82%

PCF says... "Pretty niche, but an excellent digital rendition of competitive sailing."

LAZY STEREOTYPE-'EM-UP

Crime Life Gang Wars

Rappers and computer games shouldn't mix

Price £35 **Publisher** Konami Europe **Developer** Hothouse Creations **Web** www.konami-crimelife.com

There are times here at PCFormat when a game lands in the postbag that provokes a sudden desire to get all civic-minded and indignant. *Crime Life: Gang Wars* is one game that inspires that rare feeling. It's nothing to do with the violence – some of our best

BUY THIS IF YOU LIKE...

>> **GTA: San Andreas**
Rockstar
>> **Boiling Point**
Atari
>> **Gun**
Activision

friends are violent. It's not the foul language or even the vague nods to sexually explicit content, it's just that this game is really, really bad.

PEACE OUT? PEACE OFF

If you thought roaming beat-'em-ups went out with the Sega Megadrive you were mistaken. You start as a hood working his way up the hierarchy of Grand Central City's second gang, The Outlaws. There are quite a few nods to *GTA: San Andreas*, particularly since the city is divided into numerous zones.

There is none of the variation in play, however; the in-game characters

just about manage to send you on missions to beat up different people – or in some cases, to beat up the same people repeatedly in gang fights; there

"The graphics, script and action are all criminally repetitive fare"

Drink a lot, and all the women magically remove their clothes. Moral code? Where?

only seem to be about three different models for the three gang's members.

The worst crimes this game commits centre around its laughable claims of a strong sense of morality. Apparently your character exhibits this this by protecting his own from exploitation and abuse – an aim achieved by beating people to a pulp. The script's bad, the graphics and action are repetitive fare, and the camera is perpetually looking down on you, restricting your view. At least the music's not totally awful. **Dave James**

Needs 1.5MHz CPU, 256MB RAM, 64MB 3D card

Wants 2GHz CPU, 512MB RAM, 128MB 3D card

Net gaming None

43%

PCF says... "Don't think about buying this for someone. Not even if you hate them."



You gather more homies in your posse as you move through the game.



Diplomacy

Price £25 **Publisher** Paradox Interactive **Web** www.diplomacy-pcgame.com

The boardgame from whose loins this game sprang has been played for around 40 years, and has a massive following over at www.diplom.org. It is basic at heart, but contains many extremely subtle nuances that give it an scarcely imaginable depth.

The idea is to conquer Europe in the early 20th century, but the main focus is making and breaking diplomatic relations with your neighbours. This works if every nation is under human control, but

in singleplayer mode, the AI can't cut it. There is already a huge following of the play-by-email version and it's hard to see those digital diplomats swapping over to this.

Needs 1GHz CPU, 256 MB RAM, 64MB 3D card

Wants 1.5GHz CPU, 512MB RAM, 128MB 3D card

Net gaming Up to 8 players

68%

PCF says... "Great online but it's no Rome beater."



Rollercoaster Tycoon 3 Wild!

Price £20 **Publisher** Atari **Web** www.rollercoastertycoon.com

This expansion pack for the famous park sim gives you access to 12 new rides, 12 new scenarios and two new themes for your parks: Prehistoric and Safari. You can now prod, poke and, if need be, force your animals into performing shows, all for the entertainment of your valued customers. The management of your animal friends adds some extra distractions and it's great fun dropping dangerous beasts in the middle of a crowd then sniping them from a helicopter, but it doesn't add enough to the game for the price.

Needs 1GHz CPU, 256MB RAM, 64MB 3D card

Wants 1.5GHz CPU, 512MB RAM, 128MB 3D card

Net gaming None

72%

PCF says... "Diverting enough, but it's just a tad too tame."



Knights of the Temple 2

Price £15 **Publisher** Playlogic **Web** www.playlogicinternational.com

We're not entirely sure what genre this game is supposed to fit into. Loaded down with a heavy suit of armour and a massive sword, you'd expect the central protagonist to be wading into battle straight away, cleaving heads left, right and centre. An hour into the game and we still hadn't lifted a gauntleted fist in anger. In fact we were still wandering around trying to find a food ration for some bloke in exchange for a necklace he'd recently liberated. We half expected to be sent off looking for a shrubby next...

Needs 1.5GHz CPU, 256MB RAM, 64MB 3D card

Wants 2.4GHz CPU, 512MB RAM, 128MB 3D card

Net gaming Up to eight players

47%

PCF says... "Tedious adventure that even the low price can't save."



Shooting rustlers on horseback fulfils all those Outlaw Josey Wales fantasies.



"I can see you've not been flossing regularly Mr James. I'm very disappointed."



The realistic movement of your horse is one of the joys of the game.



ROOTIN', TOOTIN' ADVENTURE

Gun

The lawless, injun-shootin', varmint-obsessed badlands of the Wild West have been brought accurately (and dustily) to life

Price £35 **Publisher** Activision **Developer** Neversoft **Web** www.gunthegame.com

Every few years the Western genre goes through another renaissance. Leone and Morricone started it off in the Sixties. Now we could be seeing another resurgence of popularity with the excellent TV series, *Deadwood*, the sci-fi/western crossover *Firefly* and now the Wild West adventure, *Gun*.

The game sticks you into the leather chaps of Colton White, a sharpshootin' hunter from the prairie, and draws you into a tale of Confederate hustling. You begin by protecting a paddle steamer from a flotilla of bandits with an evil preacher, then your father turns round and says he ain't your daddy after all. Thus begins your adventure, one that sees you travel the West looking for answers and people to shoot.

GRAND THEFT EQUINE

It's clear from the onset that the developers wanted to create a *GTA* game in a western style, and to a certain extent they've succeeded. There's a main thread of story-based missions and, inbetween, opportunities for you to fill your purse and up your stats. You're free to roam anywhere on the map and

experiment with some different ways of revenue collection. There are numerous posters dotted around the landscape giving you locations of varmints wanted by the law, dead or alive. You can even do your best Costner impression and ride for the Pony Express, hunt wolves like an injun or herd cattle; all in a Dances with Wolves kinda way.

A shame, then, that this is a graphical ghost town. The visuals may be fine for an Xbox or PS2, but we expect and deserve more effort on PC. It is without doubt a faithful port from the

ON THE DVD

>> Screenshot gallery



BUY THIS IF YOU LIKE...

- >> **GTA: San Andrea**
Rockstar
- >> **Total Overdose**
Eidos
- >> **Max Payne 2**
Rockstar

Public enemy

Like you've just stepped into the saloon



Getting involved in the various shootouts around town can get you into trouble. Kill too many folks and a posse will get dispatched to clean up. There are other ways to amuse yourself though, like getting deputised and killing legally, or holing up in a shady saloon and playing poker.

console, but we hoped for a copy of the Xbox 360 version at the very, very least. The engine has problems with smoke effects and you'll find odd artefacts appearing on screen frequently.

The story is well told, although sometimes you're introduced to friendly characters for one mission and the next minute, you find they're your sworn enemy. This aside, the missions range from defending immigrant workers from hordes of injuns to rescuing a safe-cracker from the noose, man-with-no-name-style. *Gun* is an enjoyable adventure, but it's a little lacking. It fails to recreate a plains-based version of *San Andreas*' joyously open-ended gameplay and delivers a good story ineptly told.

Dave James

Needs 1.8GHz CPU, 256MB RAM, 64MB 3D card

Wants 2.5GHz CPU, 512MB RAM, 128MB 3D card

Net gaming None

Discuss www.pcformat.co.uk/mag/gun

71% **PCF says...** "Could have been brilliant if the look was 1890s, rather than 1990s."



No-one enjoyed Neo's impression of a bowtie.



Neo finally lost patience with the shoddy shoeshine boys.



Stop trying to convert me from the Xbox, and convert me from the Xbox.



LEATHER-CLAD RUBBISH

The Matrix Path of Neo

If this does well, expect Rustic Doorstep of Trinity and the Tacky Landscape Garden of Morpheus to follow in due course

Price £40 **Publisher** Atari **Developer** Shiny Entertainment **Web** www.atari.com/thematrixpathofneo

Should this turn out to be the final legacy of *The Matrix*, it's a big binary nail in the digital coffin. The idea – to track all of Neo's battles through the trilogy and put them at your fingertips – is sound enough; except Shiny has deviated from the path, gone through a thicket of nettles and fallen off the edge of a cliff.

You begin with Mr Anderson sneaking through his office as he attempts to bypass the pursuing agents. In the horrors of reinterpretation, game time stretches every second of film time

ON THE DVD

>> Screenshot gallery

BUY THIS IF YOU LIKE...

>> **Max Payne**
Rockstar
>> **Bloodrayne**
Majesco
>> **F.E.A.R.**
Vivendi

out to interminable lengths. The sad image of a Neo running around an office like he has backache has no place in a game about a deity in the making.

MAX PAIN

As you pass through the levels, you acquire new powers. However, the crippled control method sucks out any potential enjoyment. Combat is a big problem, requiring you to click the mouse with all the timing and skill of a woodpecker putting in an extension. A five-hit combo on the mouse merely entails – you've guessed it – hammering the left mouse button five times.

Throughout the game you're put through patronising tasks that allegedly replicate key plot points in the films. Take that moment in the first film where Neo suddenly realises he knows kung-fu: according to Shiny, he went through a series of embarrassing tutorials that punished him at every opportunity. Just think – you could batter your way through a rooftop covered in enemies, kill everything in sight with barely a scuff on your PVC, only to be set upon by an agent who knocks you straight off the roof and back to the start of the section.

That's pretty scant reward for the dedicated player.

Since you're following Neo's route through the trilogy, you get the lobby fight and the rooftop barney, except they've been reinterpreted for the game, which means it's all gone *Spinal Tap* and the enemy count has been turned up to 11. By the time you fight your way to the scene from *The Matrix Reloaded* where hundreds of Smiths attack Neo, you've already gone through waves of nobodies. Why bother with another 100?

If this was called the *Path of Ed*, it wouldn't earn a raised eyebrow. The alarming fact that *The Matrix: Path of Neo* has crept onto the shelves on reputation alone should be all you need to know: don't dignify this game with a second glance.

Craig Pearson

Needs 1.8GHz CPU, 512 MB RAM, 64MB 3D card

Wants 3GHz CPU, 1GB RAM, 128MB 3D card

Net gaming None

Discuss pcformat.co.uk/mag/pathneo

30%

PCF says... "In a world where *Max Payne* exists, there's no reason to buy this."

I know edit-fu

Where storytelling and kung-fu collide



PCF thought its copy of the game was broken when watching the cutscenes. The developer has re-edited scenes from the movie for use in-game. They crash wildly around, sometimes mixing in different movies in single cutscenes. It's completely baffling and entirely nonsensical.



We challenge you not to grin manically as the horde sweeps towards you.



We're gonna need a bigger fly-swat.



Your squad engage a crane fly the size of a Boeing offscreen.

BREAK OUT THE DDT

Starship Troopers

We're not scared of spiders, but dodgy, 10 year-old movie spin-offs give us the heebies...

Price £35 Publisher Empire Interactive Developer Strangelite Web www.starshiptroopersgame.com

Funny things, tie-ins. More often than not they're put together with the same amount of love as a branded lunchbox, and rarely released simply for the love of the movie. Just another piece of money-making merchandising *Starship Troopers*, as joyous and over-the-top as the Verhoven original, feels like an exception to that rule, even if the game is deeply flawed.

It would be easy for *Troopers* to copy *Serious Sam*, going from one huge set-piece carnage session to the next, but Strangelite has tried to make a more

ON THE DVD

>> Screenshot gallery

BUY THIS IF YOU LIKE...

>> **Serious Sam**
Take 2 Interactive
>> **Quake IV**
Activision
>> **Doom 3**
Activision

thoughtful game. The missions are surprisingly varied, given the wholesale slaughter of the movie. There's still a hell of a lot of plain old bug-killing action, but it's interspersed with keeping hold of strategic points against seemingly impossible odds, protecting vital characters, hunting down giant monsters and infiltrating a spooky facility with arachnids hiding in the dark. It's varied enough to require a modicum of thought, at least.

CREEPY CRAWLY

You play a Marauder, ensconced in a suit of powered armour which allows you to take a lot of punishment and still come out swinging. It also means that you can be deployed on your own or at the head of a unit of grunts. It certainly doesn't mean you've got Master Chief envy. No, definitely not. No siree.

The huge blue bum-juice-firing boss aliens are impressive, but not that dangerous – they just take an absolute age to kill. The set-piece fights are about the relentless slaughter of hordes of basic warriors while trying to take pot-shots at the big fellas. You will find yourself bogged down in some sections

for a good half hour, doing nothing but running around the same clearing, shooting endlessly respawning, totally identical bugs.

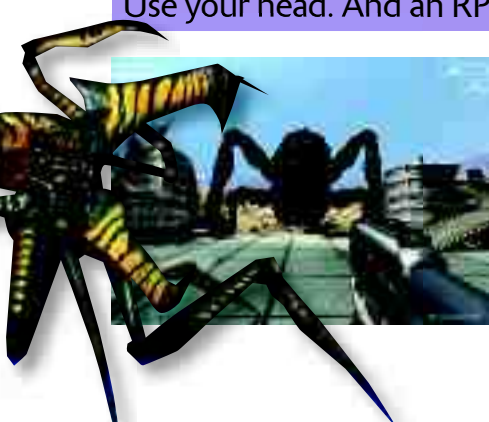
The graphics are a bit of a letdown. The bugs are passable, but it's nothing anywhere near the particle-tastic F.E.A.R. We wouldn't go as far as to say that it looks as old as the film, but it's already drawing its aesthetic pension.

Apart from the grainy FMV, which is pasted together with a dodgy voiceover, it recreates the film well. There's little new here though, and it does borrow from the *Halo* games, but still it manages to entertain. *Starship Troopers* the game is very much like the movie in fact: cheesy and stilted in parts, not terribly clever, but keeps you glued to the screen until it's over.

Dave James

Big ain't beautiful

Use your head. And an RPG



The enormous aliens scuttling through most of *Starship Troopers* provide some of your toughest challenges and require you to find the best way to take them down. Before each mission the load up screen gives you handy hints on the best way to eradicate the enduring bug menace.

Needs 2GHz CPU, 512MB RAM, 128MB 3D card

Wants 3GHz CPU, 1GB RAM, 256MB 3D card

Net gaming Lan or internet

Discuss pcformat.co.uk/mag/troopers

69% **PCF says...** "Doesn't dazzle, but is an enjoyably frenetic bug hunt nonetheless."

MOTHBALLS ON STANDBY

The Chronicles of Narnia

The Lion, The Witch & The Wardrobe

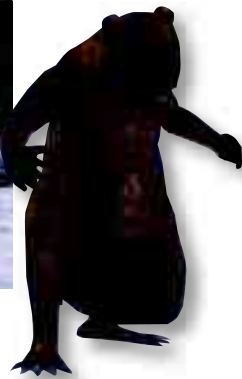
Not so much Turkish Delight as British Disappointment

Price £30 Publisher Buena Vista Games Developer Traveller's Tales Web buenavistagames.go.com/product/narniaPC.html

Some time has passed since we've read *The Lion, The Witch and the Wardrobe*, but we're fairly certain there was a minimal amount of double-teaming packs of wolves with wild spinning attacks. *Narnia* is the hanged



Why can't someone make a game version of *Battle Royale*?



ON THE DVD

>> Screenshot gallery



BUY THIS IF YOU LIKE...

- >> LEGO Star Wars Eidos
- >> Beyond Good & Evil Ubisoft
- >> Harry Potter and the Goblet of Fire EA

corpse of *LEGO Star Wars*, cruelly dressed in a fur coat. If this game is any indication, the film will be a trawl of endless wolf-bashing, and collecting cartwheel-sized coins.

WE'VE BEEN CONVERTED

Narnia is neither simple nor joyous. For huge portions, all four children must be controlled at once, while the camera wheels madly around corners or shyly stays as far from the action as it can. All of which is made 94 times harder thanks to arguably the laziest console conversion we've ever seen. Perhaps on a PS2 controller it might work, but the mysterious mess of keyboard commands leaves you requiring a third hand.

This is all well and average while the action is minimal, but when faced with later bosses accompanied by endlessly spawning enemies, and the necessity of character juggling, all while the engine



Who would build a wardrobe this tall? *Narnia* probably does fit in there.

slows to a flick-book framerate, it becomes a miserable experience.

Even as a film tie-in it fails at the simplest task of repeating the story. Edmund's betrayal is entirely skipped, yet later referred to, while any motivation for the children's actions in *Narnia* is entirely absent. Unconfirmed rumours suggest that the console version is a degree better, but whether that's the case or not, the PC incarnation remains a chuggy, detached and thoroughly unpleasant experience. **John Walker**

Needs 1.5GHz CPU 256MB RAM, 64MB 3D card

Wants 2GHz CPU 512MB RAM, 64MB 3D card

Net Gaming None

47% **PCF says...** "Scrappy console conversion of a scrappy film conversion of a scrappy book."

NEWBIE-WAN

Star Wars Galaxies

The Starter Kit

An ageing game gets a new lease of life, or is that death?

Price £20 with \$14.99/month subscription Publisher LucasArts/Sony Online Entertainment Web www.starwarsgalaxies.com

Our biggest problem with the *Star Wars* MMO is that it's never been as good as it was at original release. Many changes have been patched in to try to breathe life into one of the most in-depth and largest



To make things worse, no experience is required to become a Jedi.

ON THE DVD

>> Screenshot gallery



DON'T BUY THIS IF YOU LIKE...

- >> Eve Online CCP
- >> World of Warcraft Blizzard
- >> Dark & Light NP Cube

online games of recent times. But the latest attempt redefines the game, changing and replacing a vast amount of what was the essence of SWG.

It starts well. A new tutorial on board a space station sets the starting point for the eager adventurer, gaining levels, meeting familiar faces and getting to know the game. You are eventually plonked on Tatooine, giving you access to a long and interesting quest line.

FORCED ISOLATION

The entire combat system is refashioned into a point-and-click monstrosity, though By oversimplifying the controls, Sony has ironically made it harder to play. It's almost impossible to keep a target selected in the larger battles.

The ability to dabble in varied professions was once the main draw, giving players the freedom to choose what they wanted from their character.



The majority of content is only available with an extra purchase of *Trials of Obi-Wan*.

This led to game balancing problems, now remedied with the removal of 25 professions leaving a dull total of nine.

A dwindling community leaves planets deserted and lonely, the player economy is in tatters and the only real content is only available through expansion packs. A once interesting game now lacks soul, creativity and, crucially, things to do. **Andy McGregor**

Needs 1GHz CPU 256MB RAM, 128MB 3D card

Wants 1.5Ghz CPU 1GB RAM, 256MB 3D card

Net Gaming Online only

24% **PCF says...** "It's not big and it's certainly not clever – a total absence of any real depth."



Dinosaurs will attack your teammates and try to drag them off. Spear them!



"I must leave now, and unwittingly place myself in great danger."



There's probably a complex metaphor about Kong wrestling with his bestial self at work here. Probably.



May we suggest doing whatever it is the monkey wants, and fast?



SIMIAN SHOOTER

Peter Jackson's King Kong

He's big! He's strong! He's partial to the odd banana! But can you save cinema's most famous blonde-rescuing oversized chimp from his tragic fate?

Price £35 Publisher Ubisoft Web www.kingkonggame.com

This is a serious contender for the title of greatest film conversion ever. However, as a videogame it's considerably less successful than its CG-stuffed celluloid counterpart is bound to be. In terms of creating an atmosphere, providing character and provoking emotion, it's at the top of the field. It feels like a highly interactive film. In terms of piddling little things like depth... it's rather lacking.

Play alternates between a first-person section as screenwriter and dinosaur slayer Jack and rampaging as Kong himself. The game elaborates on the basic setup of the movie: director and crew arrive on mysterious Skull Island to make a film. Cue a series of disasters as the lost tribespeople and monstrous native fauna get in the way.

The first-person sections are by far, the most accomplished. If broken down to its simplest mechanics, there's only a handful of trials – impassable bushes can be burnt, doors require a wooden key to open and that's about it – but they're remixed to give the illusion that more's happening. Its atmosphere certainly helps. For most of the game you're accompanied by the rest of the

group, like a *Boys' Own* version of *Call of Duty*. Highly scripted, they'll act with the illusion of intelligence. The same goes for the inhabitants of the island. They're smart, but smart like animals. Realising that if you use a spear to get a harmless bug, which can then be used to attract (or distract) the larger inhabitants is a fine piece of design.

THE JUNGLE VIP

The spears are another example of the game's charm. For most of the game, ammo is limited, so you're forced to grab

ON THE DVD

>> Screenshot gallery



BUY THIS IF YOU LIKE...

- >> *Call of Duty* Activision
- >> *The Chronicles of Riddick: The Escape From Butcher's Bay* Vivendi
- >> *Where Time Stood Still* Ocean

bamboo canes and throw them. This process is an agreeably visceral representation of shoving a sharp implement through someone's head.

The main problems come while you're playing as Kong. It looks glorious, but most of the platform sequences are more like cutscenes which you're used to skipping, allied to the truest form of button-mashing. Add a few scripting errors in the main game and its general brevity – about seven hours, tops – and it's not quite the game you've paid for. There are enough scenes of great artistic composition which pack a genuine emotional punch, to make this a game we'd be happier recommending people try out, rather than giving the very highest marks to. **Kieron Gillen**

Ape escape?

It's the end of the world as he knows it



While the Kong sequences generally drag the game down, the game's conclusion is an exception. Kong climbs the Empire State Building. Then the planes arrive. Everyone knows how it ends, but it doesn't make it any less emotional when it does. Game ends in tragedy. Good work.

Needs 1GHz CPU, 256MB RAM, 32MB 3D card

Wants 2.5GHz CPU, 512MB, 64MB Pixel Shader 2.0 3D card

Net gaming None

Discuss pcformat.co.uk/mag/kong

80% **PCF says...** "A beauty, but has enough of the beast to stop you going completely ape."

CRIMINAL CARS

Need for Speed Most Wanted

Inexplicably, *Least Wanted* tested poorly with the focus group

Price £30 Publisher EA Developer EA Web www.needforspeed.com

The name explains the problem perfectly, really. Nobody actually needs speed any more; racing games cracked that one ages ago. Now, according to developers everywhere, what we need – sorry, most want – to do is paint things bright neon colours,



Win other racer's cars, then twist the knife with a horrific paint job.



ON THE DVD

- >> Playable demo
- >> Screenshot gallery



BUY THIS IF YOU LIKE...

- >> *Need For Speed Underground* EA
- >> *Juiced* THQ
- >> *Burnout 3 (Consoles)* EA

attach surfboard sized plastic accoutrements and cover the whole lot with stickers.

WELCOME TO THE FUTURE

Thankfully the aforementioned mastery of speed means that EA's umpteenth franchise still entertains, even if smothering cars with advertising for your speaker manufacturer isn't your idea of fun. The city is short of GTA's standard but stuffed with heights to leap from, fences to smash through and corners to slide round, making it more fun to tool around than actually play any missions. Arcade handling makes it easy to rack up money, cars and a criminal record, and glossy presentation helps you waste hours on the races.

Unfortunately beneath the glitz this has all the depth of a mid-driveway oilstain. Look past the motion blur and you've got deserted



"Pull over. You have broken the laws of good taste and common decency."

streets, shocking AI and die-cast model cars; hit the almost non-existent traffic and all you get is a broken windscreen. The only insurmountable barriers are big flashing ones, and the only challenge is guessing which prefabricated shortcut is worth bothering with. It's fun, but it's wilting under the pressure of the stuff that's been bolted to it; all that try-hard teen cool makes the racing flat and underwhelming, and once bored of pimping your ride you're left yearning for a proper challenge.

Jon Hicks

Needs 2.4GHz CPU, 256MB RAM, 32MB 3D card

Wants 3GHz CPU, 512MB RAM, 64MB 3D card

Net gaming Four players, internet only

70%

"Hot Wheels for hip-hoppers; flashy fun but with no real depth or substance."

GOING COMMANDO

Battlefield 2 Special Forces

Can *Battlefield 2's* brilliance be bolstered?

Price £20 Publisher EA Developer DICE Web www.battlefield2.com

The eulogising that followed *Battlefield 2's* release suggested that the game couldn't be much better. Now, with *Special Forces*, it's obvious just how plodding the large-scale game can be; these maps pull the fights



Support troops still need to find a choke point to get any kills.

ON THE DVD

- >> Screenshot gallery



BUY THIS IF YOU LIKE...

- >> *Battlefield 2* Electronic Arts
- >> *Day of Defeat* Valve
- >> *Enemy Territory* Activision

into close quarters, making building-to-building combat a necessity, and raising the pulse of an already exciting game.

QUAD SQUAD

The SF maps are furnished with a lighter, faster complement of vehicles. Technicals, jeeps and quad-bikes make up the majority of the transport, while the watery levels contain some nippy jet-skis. Cliffs and building escarpments can now be negotiated with a zip-line allowing you to cross barriers and shallow drops.

There are also new weapons; each class gets its own flash sub-machinegun on certain maps. And there are new ways to incapacitate and bewilder your foes, in the form of flashbangs and tear gas. These are countered by the gasmask, balanced by limiting your field of view.

But it could have been more. The night maps are a little irritating in their



Keep anti-armour comrades alive and you'll benefit from their firepower.

sensory deprivation, while the aircraft carrier map seems unfairly weighted against the attacking team. *Special Forces* is perfectly formed, but what it delivers is pretty limited. Very much an expansion pack, definitely not a sequel, it's going to appeal to a certain set of tastes, but seems unlikely to dent the huge popularity of the vanilla masterpiece at all.

Jim Rossignol

Needs 1.5GHz CPU, 512MB RAM, 64MB 3D card

Wants 2.5GHz CPU, 1GB RAM, 256MB 3D card

Net gaming LAN, internet, 64-player

86%

PCF says... "Tighter, leaner, smarter, but somewhat on the dinky side."



The camera angles show off the game's features, but are rubbish for playing from.



"You guys stay there. I'm going to run into the wall again and again."



Adolescent archmagies have more on their minds than growing pains.

ROWLING IN IT

Harry Potter and the Goblet of Fire

Powerful wizard required to rescue game franchise from doom

Price: £25 **Publisher** EA Games/ Warner Brothers Interactive **Developer** EA Games **Web** www.masterthemagic.com

The world's favourite pubescent trickster's latest outing has lost its original spark – from shoddy porting to inane keyboard stabbing action, this is all about dull repetition and frustrating controls. You run in a sideways, crab-like gait from one area to the next with a camera that's in dire need of an exorcist. You will rarely be able to see what's attacking you from behind nor can you accurately aim your wand at it either. In other words, even fans will be hard-pressed to recapture the magic here. There should be a special place reserved for games that play like boarding school food – soggy, time-wasting pap that doesn't really do you any good at all.

POTTER ABOUT

The first three *Harry Potter* games were relatively entertaining in an "I don't listen to ABBA but know all the words" way for the fans, but sadly *Goblet of Fire* reaches too high and fails to achieve even the average levels of its predecessors. It follows the story of the books and the movie, with Harry Potter fighting in a Tri-Wizard Tournament, evading Voldemort, kissing a girl,

avoiding Voldemort and basically trying to escape the notice of Voldemort. There are numerous additions to the control and in-game systems that probably work really well on the console but just frustrate on the PC. The menu doesn't allow for any degree of control adjustment and the tutorial is not clear at all – certainly not for the market to which it is directed. You generally have no idea how to initiate certain spells or how to choose between them. This makes it somewhat difficult to achieve spell-specific tasks and will have you

ON THE DVD

- >> Playable demo
- >> Screenshot gallery



BUY THIS IF YOU LIKE...

- >> *Harry Potter and the Philosopher's Stone*
EA Games
- >> *Harry Potter and the Chamber of Secrets*
EA Games
- >> *Harry Potter and the Prisoner of Azkaban*
EA Games

Magic monotony

It's not all tap, tap, tap, you know



You have a magic bar that builds up gradually as you play through your levels and collect certain things. Once it achieves full power you can push [S], and a magic firestorm is unleashed. This proved to be a fantastic change from the soul-sapping key-bashing that made up most of the game.

banging your head gently against your desk for light relief. It's not all bad, a couple of new additions include the option to buff up all three major characters, cards and bonuses and power boosts. These add spice to an otherwise bland dish. Now you can build up skills and abilities for each character and the cards you win have blurry pictures from the movie on the back.

If Electronic Arts had spent just a little more time tightening the camera angles and controls this may well have been a vastly superior game to any of the others. In the meantime, you can take advantage of the multiplayer game's options, if you feel like inflicting this on your friends or perhaps the people that gave it to you.

Tamsin Mackay

Needs 1.2GHz CPU, 256MB RAM, 32MB 3D card

Wants 1.6GHz CPU, 512MB RAM, 64MB 3D card

Net gaming None

Discuss pcformat.co.uk/mag/harrypotter

57%

PCF says... "A full frontal magical lobotomy is what's required here."



The automated defenses do some damage, but not enough to stop you.



Clone troopers just aren't as cool as proper Storm Troopers, no matter how hard they try.



Jedis can't die, but they get taken away from you if you don't kill anyone for a while.



AT-STs are the big metal chickens with guns.

CLONED WARS

Star Wars Battlefront 2

Sequel to the best selling Star Wars game ever? Don't fall for the Jedi mind-trick, this one is for the younglings only...

Price £40 **Publisher** LucasArts Entertainment **Developer** Pandemic Studios **Web** www.lucasarts.com/games/swbattlefrontii

Perhaps it seemed like a good idea at the time – the epic clashes of *Star Wars*, combined with *Battlefield 1942*'s idea of playing as any soldier in in a huge multiplayer conflict. Actually, given the number of copies *Battlefront* sold, it still seems like a good idea. In fact, it is a good idea. So why is it still a poor game?

You pick a class – let's try the Clone Jump Troop. Ooh, you can fly! Whee! Drop a few bombs on unfortunate droids below and a message pops up – you can play as Mace Windu now, do you want

ON THE DVD

>> In-game footage

BUY THIS IF YOU LIKE...

>> **Battlefront**
LucasArts Entertainment
>> **Battlefront 2**
EA
>> **UT2004**
Atari

to? Do you ever. Ooh, purple lightsabre! We sprint across the battlefield and slash a few droids up in third-person, then try throwing the sabre around. Great. Wait, is that a big stompy vehicle? Let's get in! Boom!

There's something about *Star Wars* that brings out the excited child in all of us, and *Battlefront 2* is so packed with cool *Star Wars* things that you'll lose count of the tiny moments of glee when you get your hands on something from the films. But after each and every one of them, without fail, there is a sag of disappointment. Every time, the new toy turns out to be lame, badly made or broken. We're *not* children, we can tell the Jedi bits are just a third-rate hack 'em-up, we've played a good FPS or two and we know *Battlefront 2*'s toothless, tactics-free blasting isn't one of them.

SPACE RACE

Playing as a Jedi is one of the main additions to *Battlefront 2*, the other is space battles. Again, that thrill of excitement. That's a TIE Fighter! Strap me in! And again, that inevitable let down. Oh. Space is empty. All I really have to do is fly to the big rebel cruiser

and go in. Sure, you can dogfight with enemy ships, but the combat is so rudimentary that they can't stop you from reaching their base and you can't stop them from reaching yours, so what's the point? Infiltrating and sabotaging the main enemy ship sounds fun, but it's too easy – you can run past the few enemies who can be bothered to hang around and defend. It becomes simply a matter of who does it first.

The sheer variety of content from all six films seems like good value, but after five minutes of trying what each map has to offer, you're still sitting there, wanting to be entertained. *Battlefront 2* has nothing to offer you but flat battlefields, empty black space, clunky vehicles, dismal AI in singleplayer and feeble weapons. Forty quid ought to get you more than that.

Tom Francis

Artificial idiots

In singleplayer, you're very much alone



We weren't expecting much of the AI, but this is some of the worst we've ever seen in a major title. At the end of one game PCF's was the only name on the board with a positive score – the AI hadn't managed to kill anyone but themselves and their team-mates for the entire round. Pathetic.

Needs 1.5GHz CPU 256MB RAM, 64MB 3D card

Wants 2.5GHz CPU 512MB RAM, 128MB 3D card

Net gaming Up to 64 players

59% **PCF says...** "All your of your wildest *Star Wars* fantasies realised – badly."

TRAGIC CASH-IN

The X-Factor

Embarrass yourself the easy way

Price £20 Publisher Black Bean Web www.blackbeangames.com

PCFormat has rarely seen something quite so pathetic as the option in *X-Factor* for a 'Single Player Party'. It conjures up the wretched, profoundly sad image of some lonely teenager crying into a microphone in their bedroom, accompanied by a very tinny sounding Ronan Keating.

The product itself looks like a direct port of the PSOne version of the original *Pop Idol* karaoke-fest,

with its low-res menu screens and an almost total lack of mouse control. The packaging promises you two of the judges from the show (the third obviously having more of a sense of her own worth) but all you get is a poor quality still of Messrs Cowell or Walsh and a three-second burst of their dubious wisdom. There's all sorts of reasons to avoid this thing. It's not a game, we're sure that games are

meant to be fun. We suggest that anyone giving you this should be 'voted off' immediately.



Oh, the agony of choice...

Needs 500MHz CPU, 64MB RAM, 32MB 3D card

Wants 1GHz CPU, 256 MB RAM, 64MB 3D card

Net gaming None

12%

PCF says... "Even if it wasn't rubbish you'd soon be bored."

SNOW BLINDING

Ski Racing 2006

Contains large Swiss men in lycra trousers

Price £30 Publisher Deep Silver Web www.skiracing2006.com

Who can forget the theme from *Ski Sunday*? Always brings to mind swirling winds, sheet ice and sheer drops. Enough to bring a tinge of frostbite to your extremities, isn't it? Well, this is the game-based equivalent without all the ridiculous temperatures and silly clothes.

You get to build up your skier's stats by gaining experience points which you can then spend on his

or her different attributes. You gain these points through taking part in the various races of the entire World Cup season. All the main ski disciplines are there, like Super G and downhill races, as well as a number of challenges you can unlock. These give you new equipment and clothes that you can gear your man up in, and require you to do things like land a jump on a particular target. Still,

the most fun part is going really fast and crashing out spectacularly...



The sensation of speed is fantastic.

Needs 1GHz CPU, 256MB RAM, 64MB 3D card

Wants 2.4GHz CPU, 512MB RAM, 128MB 3D card

Net gaming Up to 32 players

73%

PCF says... "Pretty decent simulation, but where's the après ski?"

Also out

By Dave James
GAMING ROUND-UP



Journey to the Moon

Price £20 Pub The Adventure Co.
Web www.journey-to-the-moon.com

Based on novels by Jules Verne, this is another point-and-click adventure in the *Myst* mould. You move from one screen to the next picking up and trying to combine various bits and pieces in order to solve different puzzles. Some of these are obvious, some are just plain illogical. It's these illogical ones that eventually defeat the limited interest that this title arouses.

Needs 800MHz CPU, 64MB RAM, 64MB 3D card

Wants 1GHz CPU, 256MB RAM, 128MB 3D card

Net gaming None

57%

PCF says... "Interesting for a time, but the books are better."



Friends: The One With All The Trivia

Price £18 Publisher Warner Bros
Web www.friendstriviagame.com

Voiced by minor members of the cast of the show like fingernails-down-blackboard-voiced Janice, you're treated to a barrage of detailed questions about the series. You need to be a full-on Friendophile to answer most of them, but if you've watched all 13 trillion episodes and still hanker for more, get this interactive board game. Then seek professional help.

Needs 1GHz CPU, 256MB RAM, 32MB 3D card

Wants 1.5GHz CPU, 512MB RAM, 64MB 3D card

Net gaming None

53%

PCF says... "Friends lovers should get a kick out of it."



Egyptian Addiction

Price £1 Publisher Big Toe Software
Web www.bigtoesoftware.com

This is a very solid puzzle game with endearing cel-shaded visuals. The object is to move one coloured ball and bash an identically coloured ball to make it disappear, then repeat until all the coloured balls are gone. The most effective part is the *Screwball Scramble*-style dynamic arenas, with rising and disappearing tiles. It all combines to keep you changing tack throughout.

Needs 700MHz CPU, 128MB RAM, 64MB 3D card

Wants 1GHz CPU, 256MB RAM, 128MB 3D card

Net gaming None

71%

PCF says... "On the short side, but annoyingly addictive."



Fritz Chess 9

Price £35 Publisher Excalibur Publishing
Web www.chessbase.com

Chess has always been at the forefront of the fight between humans and AI, and this latest incarnation of the Fritz series could test a grand master. There's a ton of different game styles, ranging from short 10-minute games to epoch-spanning wars. The game is very kind to beginners, offering as much advice as you require. It's also the prettiest chess game we've seen.

Needs 500MHz CPU, 128MB RAM, 64MB 3D card

Wants 2.2GHz CPU, 256MB RAM, 128MB 3D card

Net gaming Internet head-to-head

80%

PCF says... "Good-looking strategic fun for all."

high
score
PCFormat

PCFormat

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ON THE DISC

Please note that not all the programs mentioned in Workshops are on the CD edition of PCFormat. Check page 6 for more info.



THIS MONTH

106

>> GENERAL Redesign your garden

The marvels of modern technology now allow us to take a few photos of our house and place them into a full 3D landscape of our precious property. *Realtime Landscaping Photo* is perfect for planning your next Capability Brown style endeavour and you can even add pictures of the family enjoying their new hypothetical hot tub.

110

>> UPGRADES Spring clean your kit

Is your machine running too hot? It may have something to do with the thick layer of shed skin that probably coats every component inside the case. Time to blast those chunks of dust out with an improved airflow solution and gain tidier, more manageable system innards to boot.

112

>> GAMES Make the next *Half-Life*

Anyone who has ever played an FPS has probably waxed lyrical over how they would choose to revolutionise the genre. Some dip their toes in the modding scene, but why modify an existing game when you can create a standalone title from scratch with little to no coding knowledge? *FPS Creator* is the ideal outlet for those creative urges of yours.

114

>> CODING Create your own browser

With *BrowserBob* you can actually create your own web browser, simply by dragging and dropping. Given the fuss over *Firefox* vs *Internet Explorer*, now is the perfect time for you to release an application that will blindside them both and take over the world. Evil, maniacal laughter is optional...

PLUS

116 >> PHOTO

Just as you are starting to feel the post-Christmas lull, PCFormat serves up another piece of full software. *Serif PhotoPlus 7* will have you churning out professional quality photos in no time at all. Then, best of all, you can claim you simply have a natural talent for this sort of thing. All lies of course...

118 >> WEB

The final part of our tutorial on creating a blog that not only spreads 'your truth', but also features useful functionality and looks natty. This month we cast an eye over blog security and also add some of our favourite extras to benefit both you and your readers.

120 >> GENERAL

If you're looking to bag that ideal job, the first place you need to impress is on your CV. More than just a list of

qualifications, a successful resume should be a showcase for every facet of your greatness, yet shouldn't take hours to compile. *Resume Builder 2.15* is the program that best suits this job.

122 >> LINUX

Installing a Linux distribution can be a daunting prospect for even the most hardened PC nut. Luckily PCF is happy to hold your hand through Ubuntu's installation.

How do you shoot suitable photos? Rod Lawton offers his perspective

DEVISE A PLAN

If you're photographing buildings for architectural plans of any sort, the operative word is 'plan'. What's needed is a two-dimensional representation of one face of the building. That's exactly what **Realtime Landscaping Photo** needs. This picture is fine because it's pretty much straight-on and can be mapped on to a 2D plane very effectively by the software.

Once it's in position, the building's perspective will change realistically with your viewpoint, even though you'll only be able to see its one 'face'.



ERASING THE BACKGROUND

In order to position your house as a discreet object, you need to get rid of the background in the existing photo.

Realtime Landscaping Photo's documentation explains how to do this, but it's really quite simple. You just replace the background (you can use any

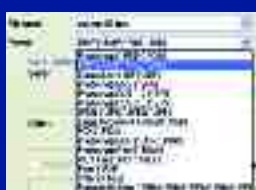
combination of selection tools you like for this) and replace it with a solid magenta. This is how your house might look once you've done this.



CHOOSING A FILE FORMAT

It's important to choose the right file format for saving photos treated in this way. It's tempting to save JPEGs, since this is the format for most digital photos anyway, but there's a problem. JPEG compression produces 'lossy' results, as we all know. This also means it can produce small colour variations where there were none before. **Realtime Landscaping Photo** will only produce transparency from a solid, 'perfect' magenta, so a JPEG will

produce speckling in the background where the pixel values have shifted during the JPEG compression process. Use the BMP or TIFF format instead.



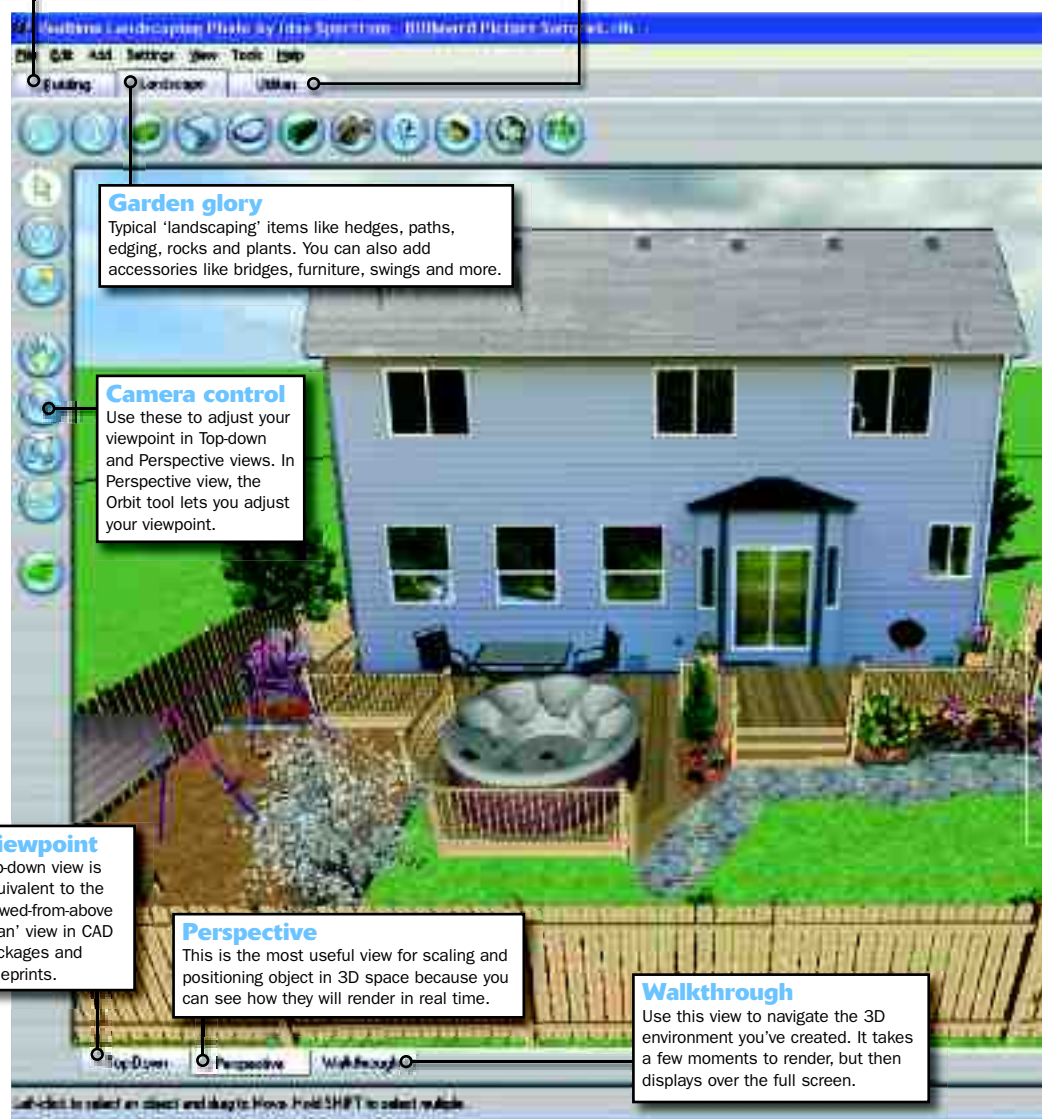
Need more help? forum.pcformat.co.uk

Workmanlike

Use the Building tab to add fences, gates, patios, steps and – most importantly – the real-life pictures to be used in your landscape.

Custom views

Tools you'll need if you decide to turn your 3D landscape into an architectural plan. You can add text, dimension lines and plot boundaries.



Garden glory

Typical 'landscaping' items like hedges, paths, edging, rocks and plants. You can also add accessories like bridges, furniture, swings and more.

Camera control

Use these to adjust your viewpoint in Top-down and Perspective views. In Perspective view, the Orbit tool lets you adjust your viewpoint.

Viewpoint

Top-down view is equivalent to the viewed-from-above 'plan' view in CAD packages and blueprints.

Perspective

This is the most useful view for scaling and positioning object in 3D space because you can see how they will render in real time.

Walkthrough

Use this view to navigate the 3D environment you've created. It takes a few moments to render, but then displays over the full screen.

Landscape your garden

Rod Lawton demonstrates how to design a 3D environment with *Realtime Landscaping Photo*

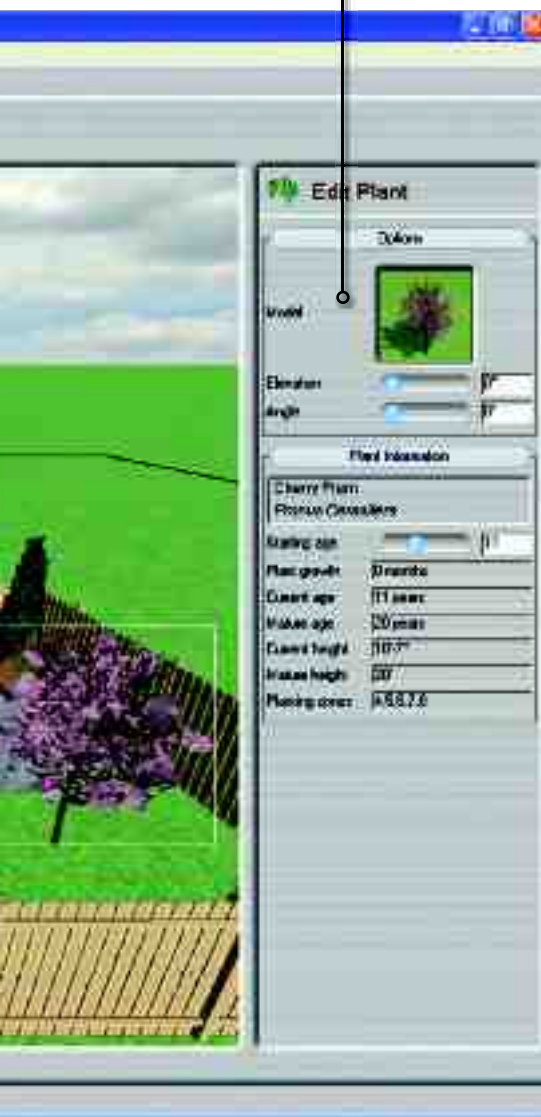
This month's cover DVD boasts one of the innovative 3D landscaping tools from Idea Spectrum. It lets you build a 3D environment based on photos of your home. You can add other objects like trees, flowers and people – all generated from photos you've taken with your digital camera or scanned

in from prints. These don't behave like full 3D objects would in a game, but they are mapped on to a 3D plane, so perspective, viewpoint and distance adjustments produce remarkably realistic-looking results.

There are also a number of genuine 3D objects which you can import, scale and position

Moving stuff in

This section displays the properties of any object currently selected. Click the object thumbnail to display the full object collection.



"The application lets you build a 3D representation of your home"

in your 3D world for added realism. These are typical garden furniture like fences, shrubbery, gates and decking.

Over the next two pages, our walkthrough will show you how you can get started with *Realtime Landscaping Photo* in mere minutes. You may not have assembled a collection of photos you want to include yet, so we'll demonstrate how it works using the supplied samples and images.

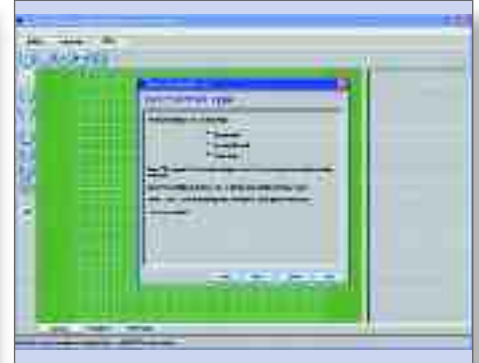
Preparing photos for use isn't difficult, but you do need to take account of perspective: avoid shooting from an angle when photographing the front of your house, for example. You also need to completely mask out the background around all of the objects which you want to import. The column on the left offers some photography and editing

Create a landscape

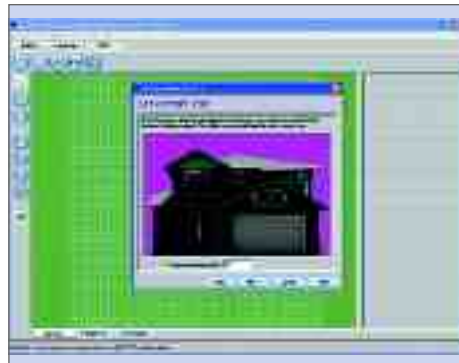
Get to grips with the basic principles



1 If you create a new, blank landscape, this is what you get. You're in Top-down view, so you're looking at a plan from above. The grid is there to help you align objects later on. You can change the direction of North if you wish and the terrain type (see the Help section for more on this).



2 We're now going to import a picture of a house, using **Tools→Picture Import Wizard**. There's an important difference between the **Background** and **Billboard/House** options. You need to choose **Billboard** (or **Other**) to import a pseudo-3D shape into your nascent environment.



3 We've chosen the **sample house3.bmp** image for our landscape. The magenta background shows it will be transparent (see the column opposite). The wizard prompts you to indicate distances, which it needs in order to render the perspective correctly in 3D space.



4 When the wizard's completed, the house has been added to the landscape and the view has been switched to **Perspective**. The 'house' is simply a 2D plane facing the camera position, but the perspective still adjusts convincingly as you move around it.



5 We can see how 2D photos are managed by clicking the **Picture** button on the **Building** tab, clicking the picture thumbnail on the right and choosing an image from the program's many different categories and samples (you can import your own too, of course).



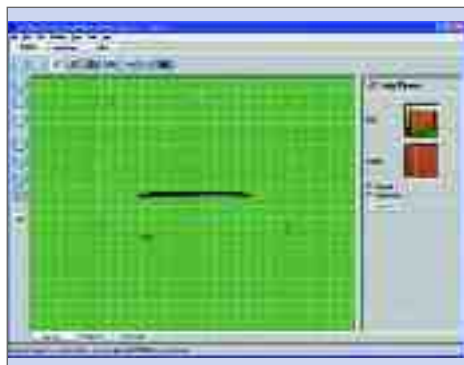
6 Once the object's been added, if you drag it to and fro in the 3D space you'll see it scales automatically as you move it nearer or further away. The knack is to position people, for example, against an object of known size, like a doorway, and adjust the **Width** slider on the right.

Turn the page for the rest of the tutorial...

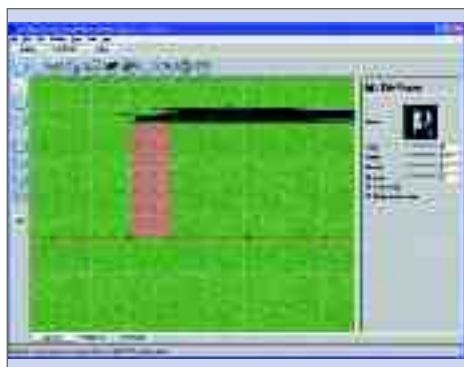


...continued from last page

Get to grips with the basic principles



7 To add a 3D object, like a fence, you're better off switching to Top-down view. Click on the **Fence** button (**Building** tab), then click to add 'nodes' for the fence corners. The fence is 'closed' automatically when you get back to the start point.



9 We really need a path leading from the house door to the gate, and this is best added in Top-down view. You'll find the **Path** button on the landscape tab. Just click to add path 'nodes' and right-click to finish. You can alter both the path material and width (right).



11 We added the tree using the **Plants** button in the **Landscape** tab. This gives us access to a library of 3D plants as opposed to two-dimensional photos. Trees even rustle in the breeze in **Walkthrough** mode, accompanied by the twittering of birds.



8 Back in **Perspective** view, we can see the newly-added fence. We've also added a gate, by clicking the **Fence Gate** tool (still in the **Building** tab) and then just clicking on the area of the fence where we want the gate to go.



10 Back in **Perspective** mode we can see how this worked out. You can see photo objects in Top-down view as well, and we took the opportunity to move the couple on to the path inside the fence. We've also added a tree to the left side of the house.



12 OK, so let's see how it all looks. If you switch to **Walkthrough** mode, it takes the software a few seconds to calculate shadows and lighting, but then you're ready to move through your landscape in any direction and at any elevation or camera angle you choose.

ON THE DISC



Realtime Landscape Designer

It's an amazingly simple and effective way to combine real-world photos with a manufactured 3D environment. While you're at it, try out the Pro version – the trial version's on the disc. www.ideaspectrum.com

IrfanView

The freeware world's most famous image viewer just keeps on getting better. *IrfanView* can also carry out all kinds of sundry image-editing and enhancement functions. www.irfanview.com

Digital Camera Enhancer

We can't all be David Bailey. *DCE* can't fix your photographic failures, but it can repair bad exposure, iffy colour and excessive noise. www.mediachance.com

RawShooter Essentials

If you've got a digital SLR camera, the chances are you'll want to shoot RAW files for maximum quality. *RawShooter Essentials* is a blindingly fast app that can sort and enhance your pictures in mere moments. It's amazed all who've tried it. www.pixmantec.com

tips which should make this whole process a great deal easier.

The program interface is easy enough to master if you've some basic knowledge of 3D software. Most of your construction work will be done in the Top-down and Perspective views. You use the Walkthrough view for moving around and exploring your 3D environment using the mouse or keyboard controls. While you're exploring the scene, you can take and save screenshots where you are, in effect, rendering a 2D version of that particular viewpoint.

Realtime Landscaping Photo is useful for pre-visualising the landscape around your house, but it's also designed to offer accurate measurements and dimensions. These are built in when you import photos (of your house, for example) and add discreet 3D objects like boundaries and paths.

The software comes with a number of pre-designed 'landscapes' which you can explore and modify as you get the hang of the program. Some of these are quite complex, though, and it may be better to start off with a blank screen and build your environment from scratch. This will give you a good idea of how the objects involved are assembled, how they relate to each other in 3D space and how the perspective mapping for imported photos works.

If you get really serious (we haven't the space for this here), you can even prepare a Project Material List including quantities, prices and totals, based on the items used for your new landscaping project. **PCF**

Tired of that constant humming? **Alex Cox** knows ways to get around those noisy fans...

Air conditioning has this funny effect. The constant white noise outflow completely disappears from your range of hearing but, if you're anything like us, it slowly lulls you to sleep. PC fans are often noisier and more snooze-inducing. The minimum number of fans you'll have in your PC is three, which is noisy enough, but the chances are you'll have more – greater cooling potential but also a very noticeable hum. There've certainly been machines we've owned which give that wind tunnel effect upon booting.

HYDROPHOBIA

One solution, if you're not willing to plump for a liquid based solution, is to install a quiet fan. Larger diameter fans produce less noise as they don't need to spin as quickly as their smaller brethren, and

there are a number which by their design should specifically offer quiet operation.

Quietpc.co.uk carries 80mm fans (left) for around £7, which yield as little as 11db at medium

RPM – an outstanding noise level for the price.

The fan bearing itself is one reason for noise, and moving air is another. The third reason, and the most common, is vibration. If one of your fans is not sitting properly, is spinning out of

alignment, or even if it's just attached directly to the case, any tiny vibration can be amplified. Wave

goodbye to vibration by getting yourself some silicone fan gaskets (left), £3.50 from quietpc.co.uk, and you'll notice the

difference immediately.

Have your say forum.pcformat.co.uk

Keep your PC dust free

Assuming you're anywhere near as slapdash as us, you'll have left the insides of your PC in a complete state after installing yet another hard drive or graphics card. Untidiness is the price you pay for ramming in new components in an excited frenzy, yet it's not the only consequence. Your PC's valuable innards, coated in a thick fuzzy layer of recently shed skin, will be running hot, reducing efficiency, warming its surroundings and leading

to the very real possibility of your whole system collapsing around you.

Dusty fans have to work harder and wear out earlier. Dust adds weight and distorts the flow of air. Dust stops air getting to chips. Dust is not your friend. But fear not! With a little spring cleaning, you'll be able to shave a few degrees off your CPU temperature without spending a penny. Well, as long as you can find some cable ties and a tin of compressed air lying around... **PCF**

Some internal sprucing

Shiny innards are a virtue, they say



1 Shut down your PC, and switch it off at the wall. Ground yourself by touching something metal (the chassis of your case is usually a good bet) and remove the side. Keep yourself static free, unless you'd prefer your computer to be useless and broken.

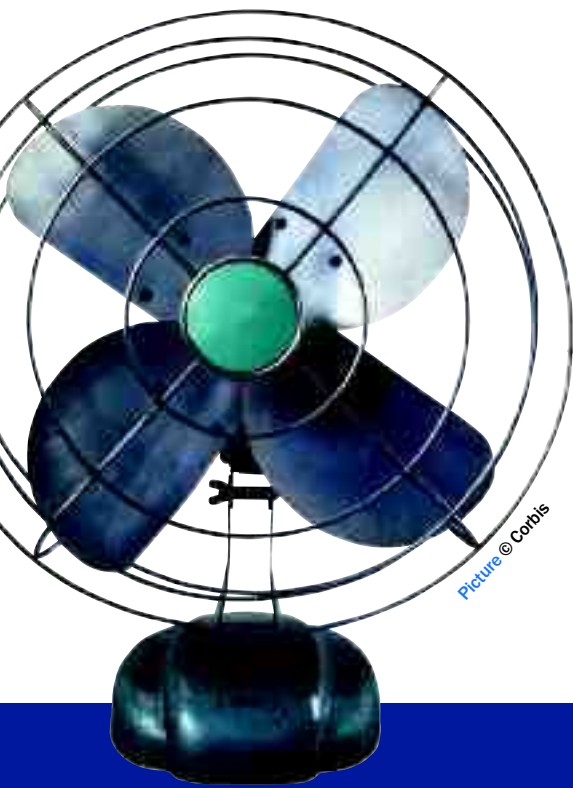


2 Our aim is to drag as much cool air as possible over the processor and card slots as possible. The back of the PC is the warmest place, so make sure the front fan is drawing cool air into the case and the rear fan is spitting it out. If not, reverse their orientation.



"Dusty fans are less efficient, so get a toothbrush and make those fins pristine"

6 Before you shift that nest of wires, move your components into the coolest place. Separate out PCI cards to give as much breathing room as possible, and do the same to your hard drives. If you only have one, move it down as close to the front fan as possible.



Build a CPU air duct

Don't let your CPU sink heat to the rest of your case



1 Measure one side of your rear fan. Add the thickness of two sheets of your corrugated cardboard (about 3mm), multiply by four, add 20mm, and cut a square sheet of card to this length. Mark the sheet into four, along the grain, leaving a 20mm lip.



2 Fold the card in on itself at the divisions, so that you end up with a square tube. Stick the lip down, and try to make a good seal. We suggest using masking tape, because the tube may well get fairly warm. Place one end of the tube onto the fan.



3 Mark the distance to the far side of your processor. Trim off the tube, angling the end of the hole towards the processor. Fix the tube in place, again with masking tape, and behold! A no frills air duct to draw air directly over your CPU.



3 The vertical position of the fans can make a difference too. Visualise the path of the air flow. Is moving the front fan up or down going to help centre the fastest moving air over the processor? Don't just stand there – get that trusty screwdriver out and get to work.



4 While you've got that fan out of the case, it's a good opportunity to give it a clean. Dusty fans are much less efficient, so get an old toothbrush and make those fins pristine. Clean both your front and rear fans, but avoid the PSU fan with your brush. It's a bit deadly.



5 Now stand your case on the side. Blast away the dust with compressed air or, if you have none, try carefully sucking it up with the hose of a vacuum. Be careful of your motherboard with that nozzle though. Static is easily the quickest way to fry your PC.



7 Now to make sure air can actually move through the case. First gather up those unsightly power cables and bundle them together, attaching away from the motherboard if possible. Use kitchen or garden twist ties if you don't have proper cable ties.



8 If you've got wide, flat IDE cables in your case, these can completely ruin the flow of air. Secure with the clips on your hard drive chassis if possible, and reduce their air resistance by rolling them into a cylinder held together with, you guessed it, yet more cable ties.



9 Finally, firmly bolt your case back together. Close up any open slots at the rear of the case – 'bonus' vents at the back will just suck in warm air. Replace the side, switch on, and you've got yourself a tidy system that should be much more efficient.



Design a game

Forget *Half-Life 2* or *Far Cry*, Mike Abolins reckons you can do better

Human nature almost demands that you compare yourself against others and we've no doubt that there have been many occasions when you've thought to yourself "I could do better than that!" Well, when it comes to first-person shooters, now's your chance, as we've got a 45-day demo of *FPS Creator* on our coverdisc this month.

GUNNING THE ENGINE

FPS Creator includes everything you need to build your own game and, better yet, you don't need any previous experience of programming. Using a drag-and-drop interface, you can build levels with the ready-built rooms, corridors, furniture and characters, and modify them as you see fit. All of the genre standards are present and correct; weapons, power-ups, triggers for scripted events and even keys and codes for unlocking doors. You can build multi-story levels with suspended walkways, upstairs floors and basements thanks to the way you construct levels in layers, and with the preview play option, you can see how everything works before you compile the finished game. **PCF**

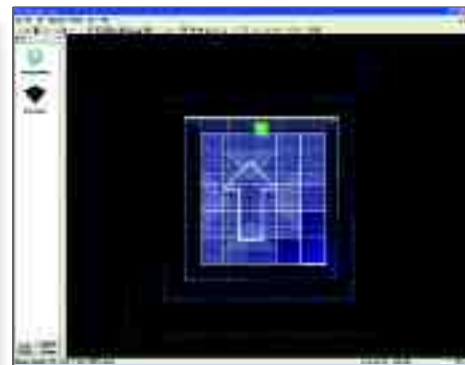
Upgrade

You can upgrade to the latest version of *FPS Creator* by clicking on the button on the splash screen when it starts up. It costs £29.99 and enables you to build multiple levels, compiling them into standalone games.

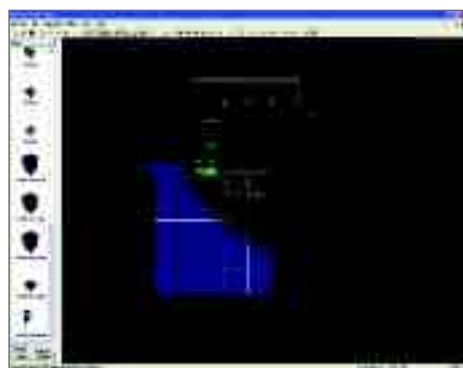
www.fpscreator.com/order.php



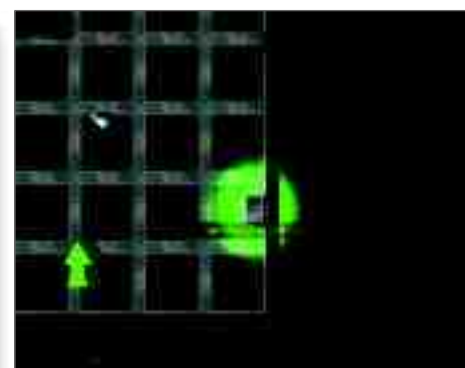
1 You'll be presented with a blank canvas upon starting the app, so start things off by clicking on the **Add New Prefab** icon in the Library sidebar. This will open the Prefab Library; pick a room (the greyed-out items are only available in the full version) and double-click on it. The outline will be displayed in white on the layer floor.



2 You can move around the layer using the cursor keys, zooming in or out with the mouse wheel. You can rotate the room by pressing **[R]** on your keyboard. Click once on the layer to place the room; the door will be highlighted in green. Click on the **Segments** tab in the **Library** sidebar where you'll see floor and corridor sections.



3 Click on one of the segments that looks like a corner of a room and then click on the square on the other side of the door to place the start of your corridor. Add a few more and then add a second room, rotating it so that the door in the second room meets up with your freshly-laid corridor section.



4 Now click on the **Markers** tab in the sidebar and choose a lighting variety for each room and the corridor. Add a start point, too, where your player will begin. Furniture can be added from the **Entities** tab. To fit furniture flush against a wall, move the furniture over to the wall in question and hit **[Enter]** when you click on the layer square.

ON THE DISC

FPS Creator

Build your own FPS games and set them in a sci-fi or WW2-inspired universe. Experience with textures, objects and physics not needed.

www.fpscreator.com

Adventure Game Studio

Relive the glory days of LucasArts by building your own point-and-click games with this toolkit. You can even compile them as self-installing .exe files.

www.adventuregamestudio.com

RPG Toolkit

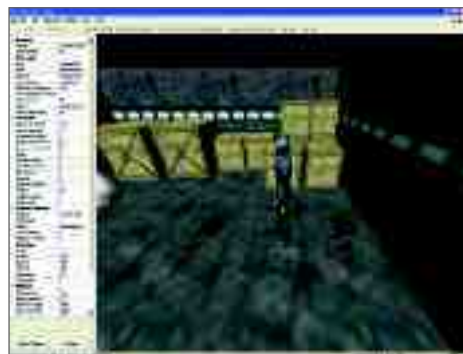
You can build RPGs in a variety of styles with this game creator, from 2D antics reminiscent of *Zelda* on the SNES to 3D *Myst*-alikes.

www.toolkitzone.com

Legendary Tales

If you'd rather focus your efforts on your game's story than the graphical side of things, you can pen your own text-based RPG using the *Legendary Tales* game creator.

www.legendarytales.com



5 Characters can be added from the **Entities** tab, too. Like any object you add, you can right-click on it to view its properties. Here you can edit the AI routine, give it a weapon and set its characteristics. You can make the character, or anything else, for that matter, explodable from this menu, too.



6 To preview your game, click on the **Test Level** button on the toolbar. This will enable you to play through your level; press **[Escape]** when you want to leave. While you can only build a finished game in the latest version of *FPS Creator*, you can save your work as an FPS file and anyone else with this program can play it.

Build a better browser

part
12

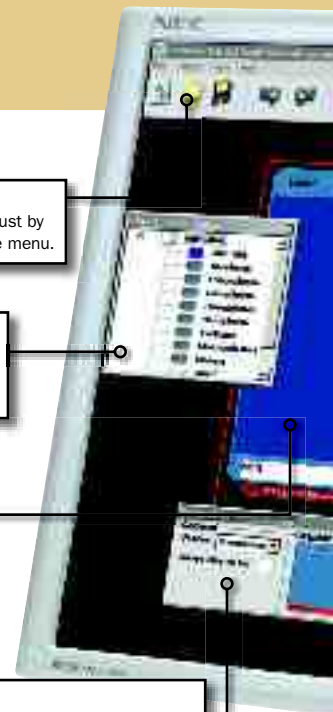
Brian Edwards helps you build your very own custom internet browser, unique to your web page, using the powerful WYSIWYG web design application *BrowserBob*

Start here
Create an app just by opening the File menu.

Main Dialog
Each element in your browser can be selected here.

What you see...
Your application sits in the middle so you drag and drop elements onto it.

Customise this
Each element incorporated into your application can be assigned unique behavioural functions here in this properties window.



When Microsoft released its brand new *Internet Explorer* in 1995 and bundled it with a new version of Windows, it looked like it had the web browsing software world stitched up. Netscape had been the world's favoured navigator until that point, and its user share declined as the years went on. In recent years Sheriff Gates' dominance has been repeatedly challenged by new upstarts in town like *Firefox* and *Opera* and the saloon door is swinging in the wind for new gunslingers. With *BrowserBob*, it could be you. All a browser really needs to do is go to a Uniform Resource Locator online and using a Hyper Text Transfer Protocol download pages which are written in Hyper Text Markup Language. Simple eh? *BrowserBob* in fact does much more than this, creating via drag and drop, useful unique and varied web applications, all without you having to write pages of code.

This tutorial will show you more than creating a simple browser for the web. Using ActiveX controls in your homepage we'll embed your browser so that your website will launch inside it. Visitors to your site will then be able to brows your pages in a completely unique way.

Visit www.browserbob.com/specials/pc_format_uk.html to register for a key to unlock the software permanently. You'll be interested to see that those lovely people at BrowserBob are offering PCFormat readers greatly reduced priced upgrades to *BrowserBob 4 Professional* for £168, *BrowserBob 4 Developer* for £89, or *BrowserBob 4 Basic* for £24 should you be well and truly bitten by the creative bug. PCF

Make your own

Launch your website in your own internet client



1 The background to your application is like the outer skin. Here we are using the Programme sample, but by browsing via the **Properties** dialog window you can select your own graphics. Most formats are usable so your browser can be any shape you like.



2 Inside the background outer skin we have the Main Web window, where the web pages will be displayed. Resize this window within your background by clicking on the outside. Bear in mind that the size you leave it will be how big the web pages appear.

“Visitors to your website will browse the net in a completely unique way”



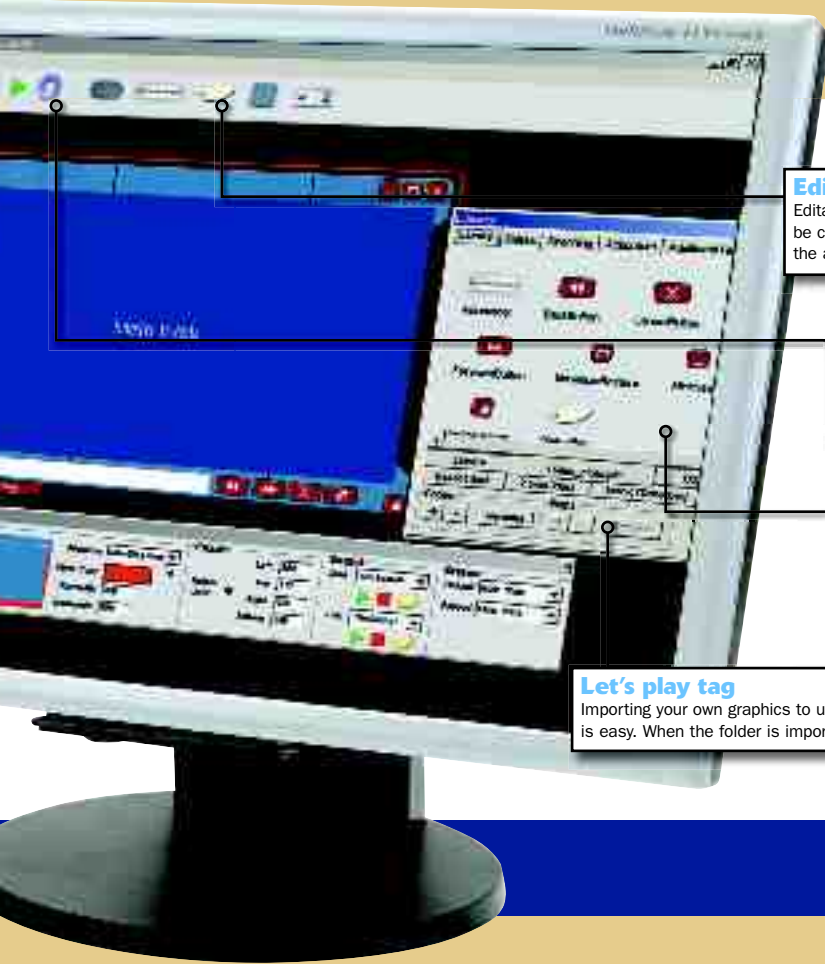
6 We've included a resize button and so we need to tell the background how we'd like it to behave when it's changing size. *BrowserBob* calls this *Puzzling* and uses lines to split the application into nine. Make these squares equally sized for smoother resizing.

ON THE DISC

WANT TO IMPROVE YOUR NEW SITE?
FIND MORE WEB APPS ON THE DVD



Design a browser



Edit and Label

Editable dialogues and labels can be created here and inserted into the application.

Click and go

Access the final stage of creating your application incorporating all elements.

The Library

We will be using the examples supplied with the program, and this is where we drag each button from to incorporate in the application.

Let's play tag

Importing your own graphics to use as buttons and backgrounds is easy. When the folder is imported it appears as a tag here.

ON THE DISC



BrowserBob

BrowserBob is a powerful application and can incorporate pretty much whatever you want from a browser. A users' forum on the website allows website developers to swap tips and expertise.
www.browserbob.com

Squid Player

Squid Player is a Flash style ActiveX control which specifically launches BrowserBob applications via webpages.
www.browserbob.com/support/squidplayer

Firefox

The new pretender to the throne of web browsers. Get the latest 1.5 release from the coverdisc if you aren't using it yet.
www.getfirefox.com

Short Menus

This powerful application lets you create your own customised menus that behave in a very similar way to the Windows XP Start menu.
www.download.com/shortmenus-2001/3000-2344_4-4821920.html?tag=lst-0-1

NEXT MONTH
WE SHOW YOU HOW TO
NEXT ISSUE WE'LL BE LOOKING AT
OTHER FUNCTIONS THAT
BROWSERBOB CAN OFFER.



3 Click on the **Edit** button on the top menu and drag it somewhere on the background. This will be your URL address window. To be a bit different we've put on the bottom. Assign its purpose by selecting **Addressbar Main Web** in the **Properties** window.



4 Click on the **Label** button and drag it where you like. These labels can function in a number of ways which are selectable in the **Properties** window. We've decided to make ours a navigation status bar. You'll probably want to click and make these transparent.



5 Dragging buttons from the Library to wherever you want is a piece of cake. Using your own graphics or the pre-prepared examples in the program it is achieved by assigning functions from a drop-down list found in the **Properties** window.



7 As we don't want the buttons to move to the wrong place as the browser resizes, it's important that they are correctly aligned. Click on each button and make sure that the **Alignment** section of the **Properties** has the right placement settings.



8 Change the startpage by clicking **URL Variables**→**Main Web** and adding the address of the page you want to come up (ours is index2.html). Click **Build** and select **Squid**, outputting the BX3 (ours is index.BX3) file which launches your browser.



9 In your index.html file include the code in the above picture. Upload all your files to your webspace. When you go to that page online Squid player will download in the background and then launch your browser displaying the start page you set earlier. Simple.

He was a digital artist ahead of the crowd.

Brian Edwards looks at Lord Lichfield

Lord Patrick Lichfield died recently aged 66. Despite using traditional film techniques since the early Sixties, he later became one of his profession's biggest supporters of digital technology.

Making his first steps into digital photography in 1999, he discovered that his studio made savings of £75,000 a year in production costs. "It's more than I paid for the equipment," he said in 2002, advocating that everyone should make the switch to digital.

Although he pined for the thrill of seeing a print appear in front of him in the darkroom, he did not miss the chemicals. He was quick to see the advantages of instantly viewing an image on a screen.

PRACTICAL ADVANTAGES

Not having to risk putting film through airport X-ray machines was immensely appealing to Lichfield. He could also photograph a celebrity, retouch the image while the subject was present, and transfer the files via email to appear on magazine covers worldwide without having to make a single print.

Typically, he used a Hasselblad camera with a digital back, and his images were slightly larger than the average, as they were often shot on a 16 megapixel camera. Like us though, he liked choosing between black and white and colour after he had taken the photo. **PCFormat** salutes his digital passion.



Lichfield's portrait style influenced many famous 1960s photographers.

Have your say forum.pcformat.co.uk

Snap up your art



We can safely assume that if you are reading this, you own a PC. However, did you realise that you also have a fully kitted-out darkroom? Not a cupboard under the stairs full of noxious smelling chemicals, but something with much better image manipulation capabilities.

People don't print as many pictures as they used to. But as entry level digital compact cameras boast four, five and even six megapixel

resolution, there is no reason why you can't toddle down to your high street photo lab and get yourself an A3 enlargement of one of your shots. What we show you here is how to art-ify one of your snaps for that very purpose.

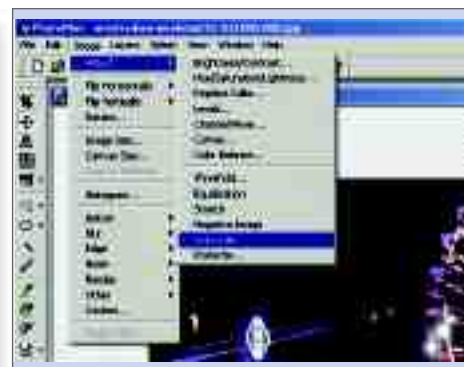
A full version of Serif's *PhotoPlus 7* is included on the coverdisc. Register the program using the instructions included in the software and you'll receive a free resource disc with some great extra features. Bonus! **PCF**

Remove colour, create art

Basic steps to turn your snaps into masterpieces



1 Black and white can often be quite an unforgiving medium when you're working on photographs without a basic range of tones. Photographs with defined shapes suit black and white particularly well. Fire up *PhotoPlus* and open up your colour image using the File menu.



2 Once the picture is open, click on the Image menu. Then from this select **Adjust**, and the click on **Grayscale**. *PhotoPlus* will then automatically leech out the colour from the image. You'll notice that this new image will look quite washed out and more grey than arty black and white.



6 Using the **Freehand** selection tool, draw around an area that is already very dark or very light. Select **Copy** from the **Edit** menu, then **Undo New Selection**. Then from the **Edit** menu, select **Paste As New Layer**. Using the **Move** tool on the left, move the new layer into position.



Upgrade

PCFormat readers can get an upgrade version of Serif *PhotoPlus 10 Studio Pack*, which includes *PhotoPlus 10* and *AlbumPlus 4* for £10 off at only £49.99. Call 0800 376 7070 and quote upgrade code RO/PCF/PH7/0106

www.serif.com

Improve your digital images

Warp tools

These allow you to skew and alter your images.

Tool Properties

Details different specific uses of each tool.

Brush details

Most tools use different sized brushes. Select them from here.

Clone tool

This tool allows you to copy other parts of the image and tweak or remove unwanted blemishes.

Layer manager

Your image can be made up of several layers, like clear plastic sheets with different elements stacked on top of each other. Manage them here.

ON THE DISC

Serif PhotoPlus 7

The full version of the software used in this workshop. Register by phone or on Serif's website and get a free bonus resource disc.

www.serif.com/photoplus/photoplus7/ph7_rcd.asp

Ulead Pocket Slideshow

A 30-day free trial of software which creates DVD presentations of your images with music, to be played back on your TV or PC.

www.ulead.com/ups/pocket_slideshow.htm

The GIMP

This open source graphics software is a pretender to the throne of Adobe Photoshop and is every bit as powerful.

www.wingimp.org

Digital Camera Enhancer

A great piece of software which allows you to greatly reduce noise and irritating JPEG artifacting, making digital photography in low light conditions a great deal easier.

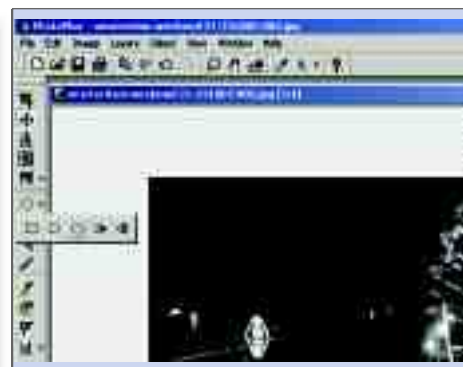
www.mediachance.com/digicam/enhancer.htm



3 Good monochrome photography thrives on boosting the blacks and whites present in the image. The contrast between the two can make or break an image artistically. Select **Adjust** from the **Image** menu as before and click on **Brightness and Contrast**.



4 Select the **Preview** option in the **Brightness and Contrast** dialog and then experiment with moving the **Contrast** slider higher than zero. Lowering the **Brightness** setting to just below zero gives you a particularly good result. Remember the optimum settings for later and click **Cancel**.



5 Some areas of the image won't benefit to the same contrast changes as others. Black and white printers used to expose images inch by square inch, but this is not required with digital images. Select **Freehand** from the **Standard Selection Tools** menu on the left.



7 In the **Layer Manager**, select **Background** and change the contrast and brightness settings to those chosen before. Then select the new layer and change the brightness and contrast to suit that layer. You'll notice the jagged edges so select the **Eraser** from the left bar.



8 From the **Brush Size** dialog select a large brush for the eraser and feather the edges of the new layer so it merges in with the **Background**. If necessary you can make the new layer slightly more see through by adjusting its **Opacity** in the **Layer Manager** dialog.



9 Once you've repeated this process as many times as seems appropriate for the image, and are sure that each of the separate layers is at the right brightness, contrast and opacity, select **Layers** and then **Merge All**. Save the new image onto a CD and print at your leisure!

Richard Cobbett talks graphics, and how to cheat your way to professional results on a budget.

Today's lesson, stock photography. Not all of us can draw, and goodness knows, I don't. Back in school, my art result didn't come as a letter – I think it would have been a F – but as a little sketch of Hiroshima, with a big arrow pointing to an easel at ground zero and the words 'YOU ARE HERE'. But never mind.

Stock photography is usually aimed at large companies, or designers with paying clients, with prices high enough to reach the moon. Of late, that's been changing. My current favourite stock site is www.istockphoto.com, which charges \$1 for low resolution images, up to \$3 for high-res. Most of the images on the MMOGLOG site started off on here. The theme's called DearAdventurer, intended to look like a suitably fantastical letter of much import, and also Everquest news. The weighty tome on the top left is really a family bible, which I rotated and kitted out with drop-shadows and a golden version of the MMOGLOG logo built in Paint Shop Pro, while the paper colour kicked off as a piece of parchment, overlaid with a burned illustration, and

an edited wax-seal on the base to complete.

So now you know. Why does the MMOGLOG look so good? Because we had an army of professional photographers, and we paid them every employer's second favourite wage, absolute peanuts. Simple.

iStockphoto lets you build up a Lightbox, keeping track of images you like until you need to license them.



Have your say forum.pcformat.co.uk

Finishing touches

part
123

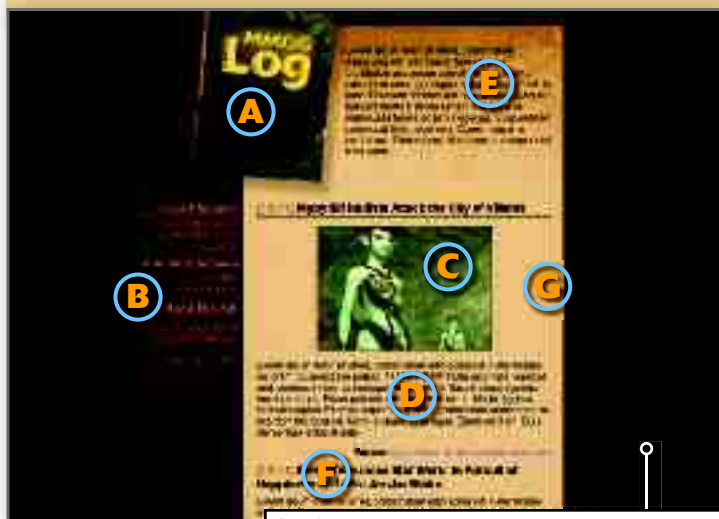
Getting a site up is easy. Adding things that are often taken for granted can be trickier – although that does mean that many don't. Even the slightest touches can add class to your site, be it fancy Javascript, or simple behind-the-scenes features. This month, we'll be taking a look at a few of them.

Before that, the usual warning. The more complicated you make your site, the more likely it is that things will go wrong. It could be a standard glitch, but it could just as easily be something

more malicious – a vulnerability in your banners script or comments system that lets any passing hacker into your control center. So many attacks are scripted that you'll be deluged with spammers filling your site with links, and defence is vital.

We'll take a look at some of the tools you can use to prevent this, but in most cases, vigilance is the only path. If you download a tool, look for an RSS feed that you can use to keep up to date on updates or potential risks. If you need an RSS reader, we like *Bloglines* (www.bloglines.com). **PCF**

UP CLOSE POLISH YOUR BLOG



"You'll have a site that is filled with spammer links, and defence is vital"

A STOCK FOOTAGE

It's not hard to get professional looking graphics. We sourced all our stock images from www.istockphoto.com, where prices kick off at \$1. The total graphics budget for the site came in at £15, plus some time to edit them for our own nefarious purposes.

B PREVIOUSLY ON...

We're using three months of direct archives here, automatically updated every month, although the full archive pages are linked to underneath this.

C A LITTLE TOUCH

A line of CSS in the template's stylesheet makes sure it automatically centers any images in the main column.

D COPY GOES HERE

'Lorem ipsum' text is used as filler while designing. It's variable and different enough to look like real copy, while utterly meaningless. (Just remember to remove it all later!)

Seeing red

Do what we say, not what we do: red is a horrible colour to design for on the web, but the best suited to this design. Use it in JPEGs, and the file quality drops instantly. We got past the problem here with the deliberately blotchy background.



E GREETINGS, ADVENTURER

This nice big space is reserved for introduction spiel, either for the MMOGLOG itself, or for descriptions of each game (Universe) that we talk about.

F THE LOOP IN ACTION

WordPress uses the same template for every entry. Put it in once, and there's no more coding for this very different story.

G SHADOWS AND SYMBOLS

This is the main column background image. The top and bottom of the paper are provided by large JPEGs, used as background images for <div>s so that we can put whatever text we want over the top.

Design Factory

Three ways to get royalty free images for your new website



1

You don't have to pay Corbis prices for the pictures on your site.

www.stockphoto.com is a brilliant site where the licensing prices range from \$1 to \$3, with photos, illustrations, models, and all sorts of other goodies for use in any promotional context you like.



2

Alternatively, if you're really working on the cheap, the Stock

Exchange (**www.sxc.hu**) has a mountain of absolutely free images. The quality's not quite as good as premium sites, but the range is impressive. It has a commercial partner, of course, at **www.stockxpert.com**



3

Morguefile (**www.morguefile.com**) works slightly differently in that it focuses more on images for reference purposes than anything else – but there's still a lot to choose from, and free access to its enormous image library. It's certainly worth a look when building a site.

ON THE DISC

Skype

Talk for free, or as good as. Unlimited chat between PCs, with very cheap rates for international calls to landlines. The cutting edge of VoIP. **www.skype.com**

Echo Password Manager

A simple way to escape from password: password purgatory while still retaining brain space. **www.echosoftware.ie.com**

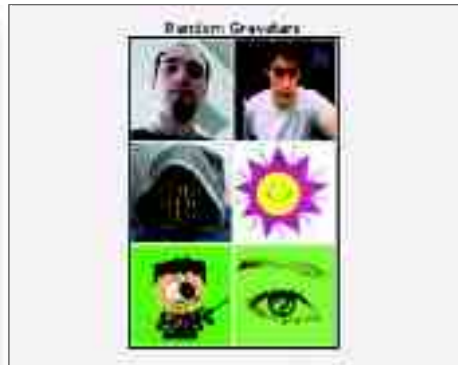
Bring on the dancing URLs

A collection of tools to jazz up your WordPress blog



1

Here's our blog – the **PCFormat MMOG Log**. We've built in quite a bit, including comments, posting, archives, and a nice olde-worlde graphical style. Time to start punching it up. You should be able to see the finished thing at **www.mmoglog.co.uk** now.



2

Avatars are one of the best ways to make comments stand out, and there's no easier way to add them than Gravatar (**www.gravatar.com**). Anyone who registers can display their avatar on your page, while you control the rating, size and defaults.



3

Statistics are a pain, especially when being bombed by referral spammers (pretending to be viewers to lure you to their sites). This is **Mint**, a superb \$30 light-stats package from **www.haveamint.com**. Or if you're cheap, look up Shaun Inman's **ShortStat** plugin.



4

Comment spammers are an absolute nightmare, with any successful attack taking hours to clean up. Put up a good fight with the positively divine **Spam Karma** plugin, available at **unknowngenius.com/blog/wordpress/spam-karma** for free.



5

You don't have to be at your PC to update your blog. With one of WordPress' Moblogging plugins (such as **www.fahlstad.se/wordpress/plugins/fmoblog**), you can add posts or upload cameraphone pictures like this one from anywhere in the world.



6

And of course, who said your blog has to be free? With Google AdSense running alongside, you can have context sensitive adverts that actually pay out. Sign up for the program at **www.google.com/adsense** and watch the money roll in.



Improve your CV

Mike Channell helps you stand out with *Resume Builder 2.15*

Nowadays, the vast majority of people know how to cobble together a basic CV in *Microsoft Word* and, as a result, employers have to sift through mountains of generic resumé during the hiring process. Traditionally, the candidates who eventually get the job are those that stand out from the crowd, and we feel that there is no better place to start than with your CV. After all, these crucial first impressions are not just the quickest way for you to make a positive impact, but also the easiest point in the process for the employer to cull large numbers of applicants if they don't make the grade. Luckily, Sarmsoft's *Resume Builder* is the perfect tonic to the bland, unformatted efforts of the hoi polloi and should ensure that your entry will impress even the most hardened and cynical of recruiters.

SERVICE RESUMES

Nestled on your coverdisc is a full copy of *Resume Builder 2.15*, but before you use the program you will be asked to acquire a free serial code from Sarmsoft's website. A small information box should appear in the bottom right-hand corner when you first run the app. Follow the link and punch in your particulars to generate a key number, which you can then copy and paste into the registration field. Manage this deeply technical feat and you will be able to add 'bona fide computing prodigy' to your new CV. **PCF**

Upgrade

Resume Builder 4 has more styles, increased control and the option to export to a Microsoft Word-compatible doc file. Further details are available from the website

www.sarmsoft.com/resumebuilder/get_free_key.asp

ON THE DISC

Sarmsoft Resume Builder 2.15

Streamlines the job application process, and is on the coverdisc.

www.sarmsoft.com

Sarmsoft Resume Builder 4

Trial of the latest *Resume Builder*, giving you 10 days to try it.

www.sarmsoft.com

Acrobat Reader

An absolute must for dealing with the huge amount of PDF files that you encounter online.

www.adobe.com

OpenOffice.org

It's *Microsoft Office*, but it costs nothing. Can you afford to turn it down?

www.openoffice.org



1 On loading *Resume Builder*, you will be presented with a 'tip of the day' and options to either begin a new project or load a previously saved CV. There are some sample resúmes included, but it is best to dive straight into starting your own document from scratch. Clicking **Create new resume...** should do the trick.



2 After selecting the language, enter your contact details and address. Items in bold are mandatory, but everything else is optional, including a title for your opus. You can even choose to publish a photo of your gurning mug to terrify the employer into giving you the job. The best of luck, it's never worked for us in the past.



3 The default layout is functional, but hardly spectacular. To create something more striking, use the **Resume Style** menu to browse the formatting options. Some are better suited to printing, and others to email or web publication, but all can be tweaked using the various buttons and font options along the toolbar.



4 Selecting one of the icons to the left of the screen brings up a section for you to add important records about your career. Click **Add** to create a new record. There is also a separate section for military history, but you may be surprised to hear that some employers don't consider six hours a night on *Battlefield 2* a 'military' career.



5 *Resume Builder* includes the option to email your CV to potential employers. Click the **Contacts** tab on the left-hand sidebar and then **Addresses** to bring up the address book, which can be added to in the same way as the resumé sections. The **Setup** tab on the sidebar contains an icon to launch the email configuration wizard.



6 With your email account recognised by the program, go to **Tools→Send Resume by E-Mail** to enter a four-step emailing process. The covering letters provided are worth referring to for ideas. In terms of choosing a file format for your email, HTML is probably the safest bet for maximum compatibility and visual impact.

Installing Ubuntu

part
12

Graham Morrison shows that installing Linux needn't be difficult

First things first. Pronounced 'oo-boon-too', it roughly translates to 'humanity towards others' from its South African roots. This just happens to be the native land of Ubuntu Linux's chief sponsor, Mark Shuttleworth. Not happy with being the world's second space tourist, Mark has ploughed some of his fortune into creating a Linux for everyone. Ubuntu Linux is for everyone, not just bearded caffeine addicts. It's not too tricky to install, easy to use, and it's the perfect opportunity for those wanting to try an alternative operating system.

This latest release is 5.10, affectionately known as *Breezy Badger*, and on this page and in another next month, we're going to cover everything you need to install and configure an Ubuntu Linux system. Ubuntu can either be installed on its own machine, or a separate hard disk or partition. Before we start though, you need to burn the ISO disc image onto a blank CD. Use a tool like *Nero* or *Deep Burn*, on our DVD, and be sure to burn the ISO as an image rather than adding it as file. For *Nero*, just select **Recorder→Burn Image** from the menu. **PCF**



1 Once you've burned the disc image, the first step is to boot your intended Linux system with the CD in the drive. This should just work, but you may need to change the boot order in your computer's BIOS. When the disc loads, just press **[Enter]**.



2 Don't be put off by the utilitarian look of these installation screens. They're designed this way to avoid confusion. Simply select your language, followed by your location. The installer will then probe your hardware, and start any network. Leave the hostname as 'ubuntu'.



3 Attention! If you intend to dual-boot Ubuntu with a pre-installed OS, a mistake here could destroy valuable data. The path of least risk is to dedicate an entire hard disk to Ubuntu. Just make sure you select the right one, and the installer will automatically create the partitions.



4 The installer will actually start to install things. This can take a while. You also need to enter your time zone and create a user account for yourself. Ubuntu will then declare that the first installation stage is complete and restart your PC.

ON THE DISC

Scribus

Linux package that is capable of truly pro results.
www.scribus.net

Celestia

View the Universe from your desktop.
www.shatters.net/celestia

Xine

Plays a wide range of media formats, and supports TV devices.
xinehq.de

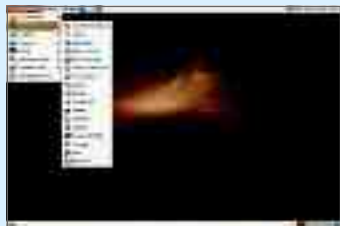
CinePaint

Image retouching application, as used on *The Last Samurai*.
www.cinepaint.org

Ubuntu Explained Now it's installed, what next?



1 When you first launch your Ubuntu system, there's another considerable wait while it finishes the installation process. After this has completed, you should be presented with the login screen. You need to enter the username and password you used in the installation process.



2 Ubuntu uses a rather brown rendition of the Gnome desktop, which is known for its less-is-more approach. Options are reduced to a minimum, as are the panels and menus. Rather like a Mac desktop, the top bar houses the application menu, while the bottom bar contains the task bar.



3 The default web browser, the almighty *Firefox*, can be launched from the blue Earth icon. You'll also find the integrated office suite under the Applications menu, along with a wide variety of games and productivity software. *Evolution*, for example, is a fantastic email client.



4 For further information on how to use your Ubuntu system, don't be afraid to click on the life-buoy icon for help. The Ubuntu team have put a great deal of effort into the documentation, and it includes an excellent user guide. Next month we'll take you through installing some new applications.

Missed a Workshop?

Want to know which cutting-edge techs you should make a beeline for in 2006? Anxious to know how to turn your humble iPod into a video-playing multimedia monster? Whatever your PC passion is, *PCFormat* is the only magazine you'll ever need...

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Luis Villazon
IS FULL OF TURKEY

AskLuis...

ALL YOUR PC QUESTIONS ANSWERED

Pub Quiz

Finished the mince pies? Try these



1 Current IP addresses are 32-bit. How long will IPv6 addresses be?

- a) 64-bit
- b) 128-bit
- c) 256-bit
- d) 512-bit

2 In what year was ASCII developed?

- a) 1959
- b) 1963
- c) 1967
- d) 1971

3 You are standing in an open field west of a white house, with a boarded front door. You must be playing...

- a) Adventure
- b) Zork
- c) Colossal Cave
- d) Myst

4 What was the bandwidth between mission control and the Apollo spacecraft?

- a) 1200bps
- b) 2400bps
- c) 4800bps
- d) 9600bps

5 How do you comment in C?

- a) # like this
- b) /* like this */
- c) <!-- like this -->
- d) REM like this

Answers on page 129

Free technical support

Got a problem with your PC? Write to Luis, or better still drop him an email. Assuming you can get your PC to work, that is...

pcfhelp@futurenet.co.uk

PCF Helpline

30 Monmouth Street
Bath, BA1 2BW

Help is at hand

Irascible technology guru Luis Villazon sifts through your pitiful PC-related pleas, and answers them in the certain knowledge that he's smarter than you

If your DVD drive packs up, you'll be glad to know that replacing it won't cost the Earth.



MONITORS

Console output

Q I am at university and I have a PC and a PS2. I was wondering if there was any way I can play my PS2 on my PC, whether it be a card with a SCART input or maybe even a SCART to USB converter or something? Does anything like this exist? Is my only option to buy a monitor with SCART input?

ANDY STONE

andy_stoner@hotmail.com

A You're not trying to play your PS2 on your PC, you just want to plug it into your VGA monitor. This might seem like a trivial semantic distinction to you but it's the kind of linguistic sloppiness that both reflects and causes woolly thinking. It as bad as the people who ask me how to "get the internet". Once you phrase your question correctly, you will appreciate that you don't need to convert from SCART to USB or anything as ridiculous as that because you aren't trying to plug the PS2 into the PC. The PS2 has a SCART output, the monitor has a

VGA input; ergo you need a SCART to VGA adaptor. Search an etailer's website for "SCART VGA adaptor".

OPTICAL DRIVES

Locked CD

Q Bit of an odd problem here... I cannot pinpoint a specific cause for it either, or a solution on the net. My CD-ROM drive occasionally locks up with a CD stuck in it. It will access the disc, but the eject button is disabled. I am running Windows XP Pro SP2 with all the latest updates. My drive is a Lite-On LTR-24102B. I have not experienced this problem with my DVD-ROM drive. Is this a Windows glitch? I have tried using a drive-locking program to lock the drive, then unlock it, but this fails to work. The only thing that releases it is a reboot, or killing explorer.exe and reloading it.

JASON WALKER

jason.walker1983@ntlworld.com

A It's the drive. The button on the front of the CD is a bit like the on/off button on your PC. It requests that the tray be opened, but this request must be ratified by the internal logic of the drive controller; there is no electrical inevitability in the way that there is with, for example, your toaster. If your drive is listening to soft-eject requests from Windows but ignoring hard-ejects from the front panel then this may tell us which bit of the controller logic is at fault but since we are not CD-ROM service engineers, we don't care. In fact, CD-ROM drives are so cheap that there hasn't been any such thing as a CD-ROM service engineer for about 10 years. Your options are three: remove the drive and replace with a new one; switch to using your DVD drive for all CD-related activities; continue to use the faulty drive but

rely on poking a straightened paperclip into the tiny 'eject override' hole on the front panel every time you want to retrieve a disc.

PERIPHERALS Undetected mouse

Q I have an old IBM 233 with AMIBIOS. No PS/2 ports, only serial; no AGP, no USB; unused PCI slots and ISA slots. I don't have any PCI cards, all are ISA units. My problem is that I can't get Windows to detect my mouse on the serial port. The mouse is in perfect working order; I have tested it on another PC. I have also tried both serial ports on the motherboard as well as four different ISA serial expansion cards which Windows tells me are working properly. My PC has 24MB of RAM and is running on Windows 98. Please help, as it is my only available PC! It might be a year before I get another one and I need the PC urgently for work that I have to do. By the way, I love your sarcasm and your dry wit.

HEIN BEUKES
amdfr3ak@acasa.ro

A What about my impatience, do you love that? Because my cup runneth over in that regard. You have a PC that must be at least eight years old, with a market value that is now lower than a new USB mouse. And apparently you need this PC urgently for 'work'; work that is so valuable that it will take a year of it before you earn enough money to pay for a replacement machine. Let me draw up a quick business plan for you. A new Dell Dimension 1100 with

about a hundred times the power of your existing computer will cost you £279 at the time of writing. Since this is a business expense, you can deduct the cost on your tax return so even at basic rate tax, the effective cost is only £218. That works out at £4.19 per week. If your urgent work doesn't bring in even this wretched amount of money, nip down to your local McDonald's. A week full-time at minimum wage ought to do it.

This then is our fall-back position. Any other solution I propose must be significantly quicker to execute; spending a week fixing the mouse on your existing PC instead of making grease sandwiches will still leave you with a rubbish PC, after all. If the mouse itself and the serial ports have both already been verified, that really only leaves an IRQ conflict with an existing ISA card or some sort of glitch in a third-party mouse driver. Remove all non-essential expansion cards first. If that doesn't help, reinstall the mouse driver from the manufacturer's disc (if you have it). If that doesn't fix it, try reinstalling Windows 98. But remember, every hour you spend on this puts you one hour further away from saving up for something less pitiful.

BUILDING PCS Restore or buy?

Q I'm thinking of trying to build my next PC and I am compiling a list of components. Do I need to buy a new OS or can I use my system restore discs from my current computer to reinstall when I swap my hard drive over, and if I can is it just a case of setting the BIOS to boot from CD when first starting up? Not having to buy XP again and

being able to use my current hard drive will enable me to purchase a better AGP or a superior CPU.

GEOFF SWAN
foehammer2003@gmail.com

A If you are planning to move the hard disk from your old PC to the new one, there is no need to dust off the restore CDs at all. Simply set the transplanted drive as the boot volume in the BIOS setup and you're away. However, if the hardware spec has changed significantly (and if it hasn't what's the point of a new PC?), the drivers from the old XP install won't match the new hardware. In most cases, Windows should spot the changes and prompt you for new OEM drivers where necessary but this doesn't always proceed smoothly when you change the motherboard. The drivers associated with the motherboard chipset, integrated sound and video, networking and I/O are all fairly petulant constructions. I have tried this a few times before and I've never been glad that I did. Reinstalling Windows after a motherboard change is always much more satisfactory. Unfortunately, reinstalling from the OEM restore discs probably won't help since this normally just applies a drive image based on the hardware that the discs originally shipped with. One of the reasons Microsoft charges OEMs less money for preinstalled Windows licences is because it knows that they cannot easily be moved to a subsequent machine and so future sales are assured.

And of course, it goes without saying that keeping the same copy of XP installed on both old and new machines won't work, because Windows Activation will spot that you have two different hardware configurations using the same license. Unless the old PC no longer connects to the internet, of course...

PROTECTION Removing passwords

Q I have deleted my password on Windows 2000 and can't get in. Is there anything I can do?

CARL MULLALLY
carlmullally3mail.com

A It's perfectly possible to forget the administrator password, but if you were to somehow delete the password,

FAQ

Lord knows, we'll need it



Keep your PC spick and span with Windows Defender.

What is it?

The artist formerly known as Windows Antispyware Beta. This has been available as a free download for Windows XP for a while but will now be bundled with Windows Vista.

Can Microsoft do that?

It may be forced to offer a version of Vista without Defender. Even if this happens, though it will be a legal irrelevance. Who will buy the unbundled version when it costs the same as the version with Defender? The question is 'will Defender work as well as the third-party rivals?'

And will it?

Probably. Not all malware is spotted by any scanner, but Defender has a couple of advantages. First, new scanning signatures can be added through Windows Update. Second, it can be switched on by default for all users.

Why not just make Windows immune to all spyware?

Spyware isn't like viruses. Most is installed with the uninformed consent of the user. Design an OS that demands the admin password before software can modify system files? No problem - the spyware pops up a dialog box requesting that password instead.

Can I use this before Vista ships?

Yes, it's being migrated to the Antispyware Beta product.

Read more at:

www.microsoft.com/spyware

Bedside table

This month, Luis is reading...

World of Warcraft Atlas

Authors Michael Lummis Publisher BradyGames
Price £16.99 ISBN 0-7440-0441-1

Azeroth is a big place and finding your way around isn't always easy. Printable atlases have been available online for free for a while now but this sumptuous hardback version wouldn't disgrace your coffee table, and includes the location of every NPC and creature. All the major towns villages and camps have their own hand-drawn maps too. Sadly however there are no maps of any of the instances (presumably because Blizzard thought it would be too much of a spoiler) so you'll need to keep the Atlas mod installed in your game interface for a while yet.



you would just end up with an account that let you log in without entering a password at all. It seems to me therefore that your pants are well and truly on fire on this occasion but *whatever*.

There are three ways to gain access to Windows NT, XP or 2000 when you don't have the Administrator password.

- 1 Concentrate really hard until you remember it. 2 Log in as another user with administrative rights. 3 Reformat and reinstall. There is also a fourth, ninja technique of installing Linux on a separate partition and running a utility to overwrite the password hash files but I am not going to explain this in any more detail, thank you very much. I dare say that this approach has been used to legitimately gain access to locked user accounts

before, much as I am prepared to believe that some people use sniper rifles for harmless target shooting.

OS PROBLEMS Activate now!

Q I unfortunately bought a laptop with an unlicensed copy of XP Pro installed recently. When I went to Windows Update it informed me that my operating system was unlicensed, and is hence next to useless! What happens now? I have access to a licensed copy on the PC I use at work, as the laptop was purchased for working from home. Do I have to uninstall Windows XP and reinstall a licensed version, or can I simply enter an appropriate serial number and activate the installation I've already got? As you can imagine I'm worried in case my computer

stops working or refuses to accept the new serial number.

JAMES ROY
james.roy4@btinternet.com

A This doesn't sound like an unlicensed copy to me. Rather I think you have a volume licence. The difference is subtle but important. A single-user licence is one that is valid for a single user (still with me?). If you install that copy on two machines, the second one is unlicensed and will stop working after 30 days unless you re-activate it using Windows Activation to transfer the licence to the new hardware (in which case it will stop working on the original PC). An XP licence that has exceeded the grace period won't let you do anything except activate. Your computer might stop working one day, but at the moment it clearly still does, so you are either still inside the 30-day window or you don't have an unlicensed copy.

A volume licence, on the other hand, is used by IT administrators to

this version of Windows. There's no need to uninstall the old one though; installing right on top will do fine.

MEMORY UPGRADE Not enough power?

Q I have an AMD 64-bit 3200+ based PC that is not tweaked or overclocked at all. The problem is this: I have another two sticks of DDR3200 512MB RAM and when I put them in and power up, the machine fails to boot into Windows. It runs the usual boot up procedures but then resets itself when the windows boot screen should appear. I don't think the problem is with the RAM layout as all the slots are now filled. I get exactly the same rebooting issue when I add in a Maxtor 200GB IDE hard drive. I have tried adding the components separately and in various combinations but still no joy. Any thoughts?

SAM HALL
S.Hall-05@student.lboro.ac.uk

Creating a blog

Because the world demands to hear you



1 Choose a host
Most blogs are simply online diaries but the format can actually be adapted to provide a really easy way to host many other kinds of website. There are lots of hosting companies but we like Typepad.com because it's cheap (£3 a month), easily customised and has lots of advanced features.

2 Choose a design
Typepad has a library of predefined styles and layouts but creating your own requires very little extra work. It's all done through drop down menus so there's no coding to do. You can change all the colours and fonts of course but you also set the number of columns, date formats and how images are thumbnailed.



3 Choose what to say
Posting entries normally happens through the Typepad web interface. The form allows WYSIWYG formatting and any images you include can be automatically resized and linked so that the full size version pops up in a separate window. You can define categories too and Typepad will allow visitors to sort archived posts.

4 Choose when to say it
You can also post to your weblog via email using a special address. If your phone is email-enabled you can also post on the move. This is the easiest way of getting photos from your phone to the blog as well. No need to mess about with cables or memory cards, just email the pic direct.

"What about impatience? Do you love that? Because my cup runneth over in that regard"

install the same copy of Windows on lots of different computers. It's cheaper and more convenient because you don't need to go through Windows Activation separately on each PC. Essentially, this is the same copy protection strategy as existed prior to XP, ie. none. To prevent unscrupulous vendors from installing volume licences on machines destined for retail, Microsoft has crippled volume licences to prevent them from accessing Windows Update. In a corporate environment this doesn't matter because updates are downloaded centrally and distributed by sysadmins, but the idea is that customers will notice that their version of Windows is crippleware and complain before their warranty period is up, thus putting the dodgy vendors out of business by the magic of the Free Market Economy. The problem is that unscrupulous vendors don't care. There are also some vendors that don't notice and unwittingly buy and resell volume licences second hand.

Just getting hold of a valid serial number for a single-user licence isn't enough. You need to reinstall

A This sounds like a power problem to me, though RAM is hardly known for its electron-guzzling properties. If your motherboard has an integrated graphics chip, try removing the graphics card and switching to that. This should significantly drop the drain on the three-volt rail. If you now find that you are able to boot to the desktop, you may safely invest in a new PSU. Preferably one using some exotic, otherworldly form of energy as its source of electricity.

MONITORS Fade to pink

Q My 19" Gerricom monitor has started fading all the colours to a sort of pink, flickering hue, but it sometimes works perfectly. Is there a remedy?

JIM
jimenglish@eircom.net

A Ready everyone? On three. One. Two. Three! GET A NEW MONITOR! And now, that same answer but with the /verbose flag on. When your

monitor begins to leech colours, this is usually a sign that one of the electron guns is either failing or is misaligned. In your case, the pinkish tinge indicates that the green gun is at fault. Since this effect is intermittent, it is probably caused by a dry solder joint, rather than a blown circuit, but this is a detail of interest only to the oldest-school of all old-school of TV repair technicians. If your monitor is new, replace it under warranty. If it is old, treat it as a fantastic excuse to upgrade. If it is already state of the art and only just outside the warranty, curse the desk it sits on and the day you were born. But whatever mental attitude you require to take you forward, you need to Get A New Monitor.

CONNECTIONS Double cable

Q I have got a monitor with VGA and DVI input, and my graphics card has a VGA and DVI input. If I were to plug a VGA-VGA cable and DVI-DVI cable at the same time, would it damage the monitor in any way?

ATEEN PATEL
AteenP@nsoptimum.co.uk

A I'll tell you what. I'll answer your question if you answer mine: what do you possibly hope to achieve from this procedure? Is this a backup so that your video signal will be guaranteed passage to the monitor even if one cable fails? Are you hoping to overlay one signal on the other for a picture of unparalleled richness and vibrancy? Or are you just trying to rip a hole in the space-time continuum and usher in a dark, apocalyptic age? I'll confess up front that I haven't tried this myself, just as I

haven't specifically tested most of the infinite number of other pointless and idiotic ways you can misconnect a PC. But I'm fairly certain that the cosmos is at no more risk of immediate annihilation than your monitor.

Coming up after the break: What happens if you dial the same number on your landline and your mobile phone?

NOT PIRACY Copying DVDs

Q I have made a short story movie, I've mastered it and put it onto DVD, (it's in widescreen and even has 5.1 sound, don't you know) but I've since lost the master media.

Here is my problem though, I have bought into the Windows XP Media Center Edition ideal, and want to stream this DVD (which is not copyrighted in any way – I made it!) onto my soon-to-arrive Xbox360. The 360 only allows .wmv and .dvr-ms files, to be streamed to it. Is there a way to convert this DVD without losing any of the quality (audio or picture) into a .wmv file that is as easy as "Here is my DVD", "There is your wmv file"? Preferably for free...

PAUL BILSBOROUGH
paulbilsborough@gmail.com

A I'm going to ignore the little voice in my head asking why you don't just play the DVD on your Xbox directly, and take it as an article of faith that you have a perfectly legitimate reason for ripping this DVD. Unfortunately, the overwhelming market for the software you need is for people who want to back up their local Blockbuster and so the sites selling it tend to dwell in the less savoury

recesses of the internet. Nevertheless, www.allformp3.com seems to have what you want. Check out www.allformp3.com/dvd-to-wmv.html. Not quite free but pretty easy and with a quality level that is essentially restricted only by your hard disk capacity and available streaming bandwidth.

PIRACY And copying DVDs as well...

Q My computer came with a DVD/CD writer. Can I fit another so that I can play DVDs on one while recording onto the other?

WILLIAM
wh004v0269@blueyonder.co.uk

A See? This is exactly the sort of thing I'm talking about. William clearly wants to do no more than back up his own DVD collection in case his precious discs get irretrievably scratched, and here we all are judging him based on a stereotype which applies to no more than 99.9998% of the law-abiding DVD-copying community.

As anyone who has ever duplicated material to which they own the copyright will know, you don't actually need two optical drives to do it. Indeed, there is no advantage to having two. You still need to copy the contents of the first disc to your hard disk before you write the copy disc. This is because the copy disc needs to be mastered in a single pass and you need the higher speed of the hard disk to keep up with the burning process. Incidentally, did you notice the way I effortlessly switch between the spellings of disc and disk? That's because I'm a pro. **PCF**

VIRUS OF THE MONTH

More digital evil clogging the web



Amazingly, Lupper isn't interested in your registry.

Type Worm
Infests Linux
Number of outbreaks <100
Virulence Moderate
Lethality Moderate
First detected 6/11/2005

Symptoms

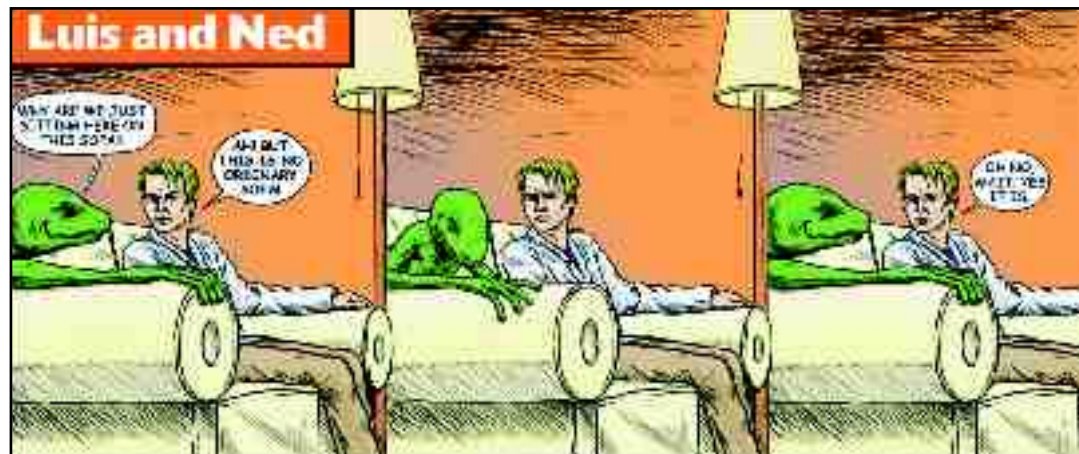
Yes, that's right! A piece of malware that doesn't target Windows! But you shouldn't be surprised, the very first internet worm ran on Unix, after all. This one exploits three separate vulnerabilities on Linux web servers running PHP. The worm will update itself over the internet and it listens for remote instructions on several UDP ports so it could theoretically be used for denial of service attacks or password stealing. It spreads by sending malicious HTTP requests on port 80 to randomly generated IP addresses. If the target server is running one of the vulnerable PHP scripts at specific URLs and is configured to permit external shell commands and remote file download in the PHP/CGI environment, a copy of the worm could be downloaded and executed.

Prevention

Either make sure your server doesn't run PHP at any of the URLs that the worm targets (see the link below for a full list of these) or configure PHP not to permit the use of external shell commands.

Cure

Symantec recommends that the web server be cleaned by completely reinstalling Linux. tinyurl.com/8qnuz



Words Luis Villazon Pictures Mark Mitchell

state of the art

#8

THE LATEST TECHNOLOGY EXPLAINED

Screen test

New monitor technologies are arriving which could kick the trusty CRT into the skip once and for all, explains James Morris

The LCD panel has virtually taken over from the CRT on mainstream PCs. But if you're a hardcore gamer, there's a good chance you still have the older technology sitting on your desk. TFTs may be space-saving, less power-hungry and increasingly affordable, but they're still not the optimum choice for games. A good CRT remains more responsive than a TFT, with greater brightness and a broader dynamic range.

LCDs can also be very susceptible to reflection in bright lighting. The traditional method of avoiding this is by using a laminated matte anti-glare surface, which diffuses light hitting it so as to reduce the reflection you actually see. However, you'll still notice a hazy reflection in bright lighting. It can also have a similar effect on light emanating from within as that bouncing off, making the screen image a little less crisp. To combat this, Sony has been peddling a new anti-reflective screen technology for just over a year. Various marketed as XBRITE, XBlack and Clear Bright, it produces more vibrant colours, greater tonal contrast and a crisper image. Although Sony has made the most of marketing this technology, it isn't actually Sony's concept. In fact, Toshiba's TruBrite, HP Compaq BrightView, Dell TrueLife and ScreenTek's PixelBright all use the same idea.

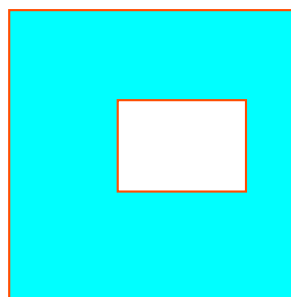
Instead of using a matte anti-glare finish, these panels incorporate a high-gloss surface. Common sense would have it that this would be more reflective, but a chemical coating is added which changes the refractive index so that it's closer to that of air. This greatly reduces the reflection and refraction of ambient light, so most of it enters the screen surface rather than bouncing off. However, as a high-gloss surface has been used, the image coming from the TFT can pass through without distortion; the image is crisper, greater contrast is possible, and viewing angles are wider.

Anti-reflective surfaces do have their drawbacks. They don't prevent ambient light reflection quite as much as anti-glare. So, in very bright ambient light they could end up being more uncomfortable to use than an anti-glare screen. In this case, the reduced image quality of the latter could be a better compromise.

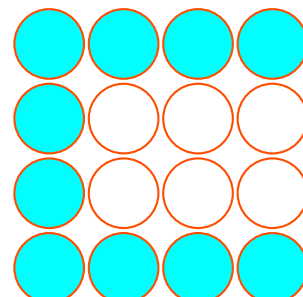
A major advantage of anti-reflective surfaces is their impact on contrast, with some offering a ratio of 1000:1 compared to under 500:1 from many



HOW BRIGHTSIDE'S



HDR IMAGE HDR calls for clear contrast between brightly lit areas and their backgrounds, which causes difficulties for traditional LCD technology.



LED ARRAY Instead of using one uniform light, the BrightSide system uses an array of LEDs to illuminate the pixels on the TFT panel.



In order to get this end result...



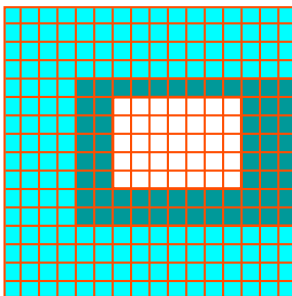


An anti-reflective surface treatment means less light is diffused from the TFT panel, so the image is brighter, while reflections are still diminished.

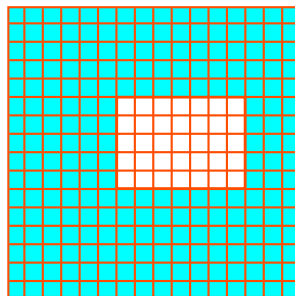
OLED technology already allows the creation of high contrast colour displays for small portable devices, but the leap to larger ones like notebooks could be just around the corner.



SYSTEM WORKS



LCD WITH CORRECTION The TFT pixels are switched to a pattern which compensates for the lit area of LEDs. This enables a clear image to be produced.



OUTPUT IMAGE The end result is a faithful, extremely crisp image with clear contrast between the brightly lit and any slightly dimmer areas of the image.



...a TFT panel with pixels switched to these settings...



...is lit by an LED array emitting this light pattern.

TFTs with standard anti-glare surfaces. TFTs use cold cathode backlights bounced off a reflective layer to provide uniform illumination. So black pixels are created by shutting out light for that particular pixel, which can never be performed perfectly. Although TFTs can be pretty bright - say 500cd/m² or more - the lowest luminance could also be fairly high, perhaps even greater than 0.5cd/m².

TAKE A WALK ON THE BRIGHTSIDE

Fortunately, much higher contrast ratio displays are just around the corner. One promising possibility comes from BrightSide Technologies (www.brightsidetech.com), which uses a matrix of 1,380 individually modulated LEDs in its TFTs. That's not one for every pixel, but each IMLED can be varied from off to on in 255 steps. So if true black is required, the corresponding IMLED can be turned off. This is on top of the LCD's normal 8-bit range, giving the BrightSide 255 times the dynamic range of a standard LCD.

BrightSide's technology offers a nominal contrast ratio of 200,000:1. However, the contrast ratio is derived by dividing the brightest possible area of a display screen by the darkest possible area, so if you have a very dark region, your brightest area doesn't need to be so bright for a very large contrast ratio. BrightSide's darkest could be 0cd/m², and its brightest areas are 3,000cd/m² - so the contrast could potentially be infinite. Unfortunately, BrightSide's technology does have its downsides, though. So far, it doesn't come cheap - the initial DR37-P 37-inch model costs a princely \$45,000. It also consumes twice the power of a conventional 37-inch display.

BrightSide is not alone in chasing higher contrasts. Canon and Toshiba's SED (Surface conduction Electron emitter Display) promises a 100,000:1 contrast ratio. The SED is actually more like CRT technology than TFTs, with light created by electrons hitting a phosphorescent material. But instead of a single beam of electrons directed using an electromagnetic yoke, each phosphorescent pixel has its own individual electron emitter separated by a very thin slit. Since the voltage required to bridge the small slit is low, the power consumption is also low. But the colour, dynamic range, and response are similar to a CRT. Like the BrightSide technology, however, SED will not come cheap initially, so is likely to be found only in premium HDTVs for some time to come. Similarly, Sharp's Mega Contrast LCD, as seen in the Sharp ASV Premium 37-inch HDTV, offers a staggering 1,000,000:1 contrast - but at a price only TV studios could afford.

One of the holy grails of display technology in this respect has been the organic light-emitting diode, or OLED. Aside from the cost benefits of this technology, it can also offer good contrast. As each pixel is its own light emitter, it is truly black when off. So, like the BrightSide and SED technology, OLEDs are capable of a high dynamic range. The first device with an OLED display was Kodak's EasyShare LS633 digital camera, and lots of MP3 players and mobile phones now have them. However, OLEDs still have issues with device lifetime. This makes them less suitable for use in monitors, which must emit more light than handheld devices, reducing their comparable lifespan. So OLEDs remain restricted in their usage. But companies such as Cambridge Display Technology (www.cdtltd.co.uk) are working on extending the longevity of OLED, so it could still offer the mainstream displays of the future. The company has announced the creation of 14-inch OLED displays with a resolution of 1,280x768. With so many new technologies arriving, the future of screens is looking bright. **PCF**

NEXT MONTH
VIIV EXPLAINED
 THE FUTURE OF SMALL FORM
 FACTOR HOME ENTERTAINMENT
 COMPUTING



XFX 6800GS
£170
p135



Sapphire X1800XL
£234
p136



MSI NX7800GT-VT2D256E
£271
p136



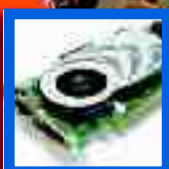
HIS X1800XL
£271
p136



Club3D X1800XL
£279
p137



Connect3D X850XTPE
£292
p137



Forsa 7800 GTX
£306
p138



Radeon X1800XT Reference
£375
p138



Asus N7800 GTX TOP
£384
p139



7800 GTX 512MB Reference
~£500
p139



Card games

Andrew Miller tests 10 of the latest and greatest graphics cards in search of a 3D dream

With Christmas just passed and a host of new games released, we're hoping that Santa brought you a big, fat, multipipe card to while away the holiday season. Unfortunately, most of us are at an age where Santa no longer brings us toys during the night, and instead we must make careful choices about spending what could be as much as £500. PCFormat is here to make sure you splash the cash where it'll count.

Recently, we've seen the launch of ATI's X1000 series cards and NVIDIA's seventh generation. Disappointingly, they don't mark a leap ahead in performance that the last generation provided, but they're still the pinnacle of graphics tech

today, and with some of the newer games, every little counts when trying to get a superb frame rate.

We've taken 10 cards, ranging from previous generation models to the very newest iterations, some of which are currently considerably harder to get hold of than the Holy Grail. We've put them through their paces and, hopefully, our advice will help with your next buying decision. Please bear in mind that we're not really pitting chipset against chipset as we often do when reviewing graphics cards: in the shops, you'll find many cards featuring the same chipset from different manufacturers at different price points. If we think a retail graphics card is too expensive given the pricing of its peers, we'll mark it down. On the flipside, »

however, an identical card at a reduced price point will score much higher.

Benchmark-wise, we used three popular and taxing games that you're likely to want to play with your new cards – *Quake IV*, *F.E.A.R.* and *Half-Life 2: Lost Coast*. These, coupled with *3D Mark 05*, give very good indications of relative graphics performance.

We tested in four different settings: 1,280x1,024 and 1,600x1,200 with either 2x AA and 2x AF or 4x AA and 8x AF. When overclocking, we benchmarked at the highest possible settings, to see if the extra speed really makes a difference where it counts.

All the benchmarks are on the coverdisc, if you want to go in-depth. In reality, with drivers changing frequently, you can only really compare retail card performance at a single snapshot in time. During our testing, for example,

both ATI and NVIDIA released new drivers, which altered performance subtly.

HIDDEN COSTS

Bear in mind that your overall system needs to be on a par with any up-to-date graphics card you buy. So, upgrading your graphics card might also require a new power supply; for the cards on offer here, we'd say 400W is the bare minimum. Don't cheap out on this; buy a decent one – you'll thank us later. 512MB RAM and a 1.6GHz CPU will bottleneck your system, so you'll not see any of the benefits of the increased graphics performance. For today's demanding games, we wouldn't recommend less

money lies. So if you're a little tight on budget, consider something more in the midrange area, where you'll get more performance for your money. Past £200, you get diminishing returns on your investment. Similarly, much lower than £100 and you'll wonder why you bothered with a new card at all, as you'll barely be able to play new games. Considering your graphics card will probably be out of date in 6-12 months, think long and hard before handing over 400 notes for the best money can buy.

SLI and Crossfire technologies are also worth adding in to your equation. If you already own an SLI compatible graphics card such as a 6800GT,

“Upgrading your graphics card might also require a new power supply. 400W is the bare minimum”

than a gigabyte or fast RAM, and a processor that runs at 2GHz or better.

Taking all these factors in to account, a simple graphics card update may end up costing you a lot more than you'd hope for, with what could end up being a complete system overhaul. So think carefully about whether you even need a new graphics card at all. Most of the cards on test here are in the uppermost segment of graphics card technology. This is not where value for

consider just buying a second card to match, and an SLI motherboard, instead of an all-out replacement. The underperforming CrossFire configuration (see p.62) gets trickier as you need both a master and a slave card, and is very expensive. Finally, think long and hard about whether to buy now or hold your horses for the time being. ATI is soon set to release its R580-based cards – yet another generation of chips which will see performance rise and price fall.

HOW WE TESTED

No two PC boxes are the same. As you'll see from our findings, there are plenty of case design options to consider...



Performance

We pushed the limits of our stack of graphics cards by benchmarking games at a variety of different resolutions and AA/AF settings. Our exacting performance tests also took overclocking in to account, as this can be a great way of pushing your card that little bit further. For more details on what benchmarks we ran, look to your right.



Noise

If you sit at your computer all day like the hard-working journalists here at PCFormat, you may find noise a big issue. If on the other hand you already have 101 fans in your computer then one more is going to be like a drop in the ocean. We listened to our cards' noise levels both while they were idle and when we were pushing them hard with 3D-intensive games.



Bundle

In our opinion, the bundle is one of the least important factors to consider when weighing up which item of hardware to buy from a list 3D cards often come with outdated games and software that will generally get left in the box, only to collect dust in your garage. For some, however, it can be the deciding factor on their biggest computer purchase for the year.



Value for money

Everybody wants to get their money's worth, but for some this is more important than others. There are a crazy few that just want the fastest 3D card on the market, no matter what it might cost, who would consider this factor a useless one to take in to account. Most of us, though, have budgetary constraints to consider when upgrading.

Enter the X1900

Is the R520's successor ATI's secret weapon?

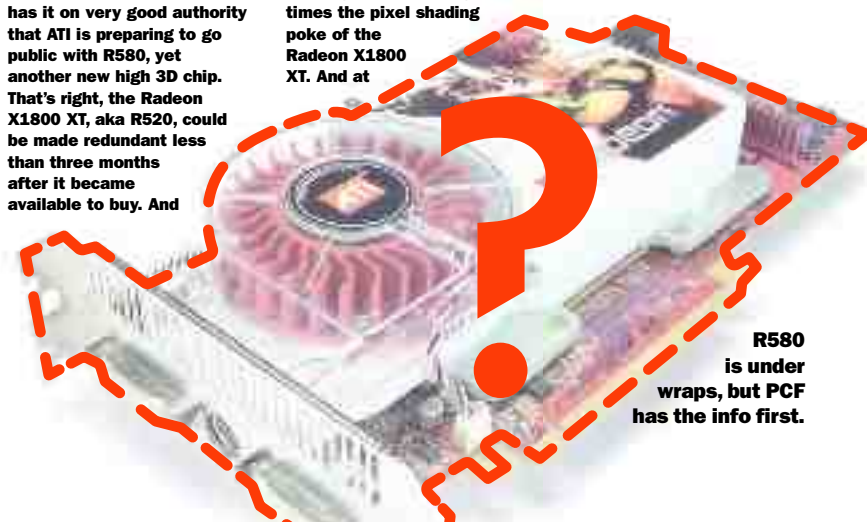
EXCLUSIVE

Poor execution. That's what 2005 has been all about for ATI. On paper, the outfit launched a range of new technologies, including CrossFire, its answer to NVIDIA's SLI dual-card rendering platform, and the world's first family of 90nm 3D chips. But the silicon-based reality has been one of delays, aborted launches and phantom products. ATI needs to start delivering. And so it will, if our spies are correct. Because PCF has it on very good authority that ATI is preparing to go public with R580, yet another new high 3D chip. That's right, the Radeon X1800 XT, aka R520, could be made redundant less than three months after it became available to buy. And

we can tell you exactly what R580 is going to look like. In some ways it's a dead ringer for R520. It's a 16 pixel pipeline chip, complete with 16 texture units, 16 ROPs and a total of eight vertex processing units. But when it comes to pixel shading power, R580 is an absolute beast. Just like ATI's new midrange chip, the Radeon X1600, R580 boasts three pixel shading units per pipeline. So, that's 48 pixel shading units and fully three times the pixel shading poke of the Radeon X1800 XT. And at

least twice the shader power of the 7800 GTX. What's more it will boast memory that's even faster than the 1.7GHz specification of the 7800 GTX 512MB.

Meanwhile, NVIDIA is preparing a 90nm die shrink of the 7800, possibly beefing it up to 32 internal pipelines at the same time. But we reckon that chip won't ready until spring. If so, ATI will be back on top. For a few months, at least...



R580 is under wraps, but PCF has the info first.



XFX 6800GS

Price £170 Web www.xfxforce.com



The 6800GT was a momentous card with amazing performance at a very affordable price. It will go down in history as one of the classic cards owned by many people as it enabled you to play all the latest games on the market without worry. It also had other endearing features too, such as its single slot design and superior Shader Model 3 architecture that made the choice an easy one. Because of this, it's both a moment of disappointment to see NVIDIA discontinue the product, but also a moment of joy to see it replaced by the 6800 GS.

Although the model numbers are very similar, the cards themselves are very different. The 6800GS is built around a 12 pixel pipeline, five vertex unit core, unlike the 16 pixel pipeline and six vertex unit configuration of the 6800GT. In fact, the specifications are closer to the plain 6800. However, we do see the die shrinking from 0.13nm to 0.11nm. This would explain the increase in clock speed over the 6800GT and the

DETAILS

Core 6800GS
Memory size 256MB
Pixel pipelines 12
Vertex units 5
Shader model 3.0
Core frequency 485
Memory frequency 550 (1,100)
Core overlocked 500
Memory overlocked 650 (1,300)

BENCHMARK

Half-Life 2 1,280x1,024 2xAA 2xAF 39.2
Half-Life 2 1,600x1,200 4xAA 8xAF 26.1
Quake IV 1,280x1,024 2xAA 2xAF 65.2
Quake IV 1,600x1,200 4xAA 8xAF 37.5
F.E.A.R. 1,280x960 2xAA 2xAF 38.5
F.E.A.R. 1,600x1,200 4xAA 8xAF 18.0
3D Mark 05 5,729

drop in power consumption, for the power-conscious amongst us. This clock speed increase is enough to close the gap and give performance that is very much comparable.

This XFX variety of the card comes pre-overclocked, with an extra 100MHz on the memory and another 60MHz on the core. This should make it faster than a 6800GT. Thankfully the overclocking doesn't stop there, with another 200MHz happily squeezed out of the memory. This gives around another 5-7% extra performance for your money, over the original GT.

Costing £170, it's around £100 cheaper than a 7800GT, but still packs enough punch to play the latest games, albeit at slightly lower settings. Bundled with a copy of *Far Cry*, this card is excellent value

for money and well worth considering if you need to save money to buy that new motherboard and processor.

86% PCF says... "Excellent value for money and still capable of playing today's games."



Sapphire X1800XL

Price £234 Web www.ebuyer.com



The X1800XL is the first of the X1800 cards to become widely available. On paper, they may seem close in specification to their predecessors (the X800 series), but internally a significant amount has changed. Quite importantly for newer games, we see the addition of Shader Model 3. The main difference however is in the efficiency of the core design, utilising its 16 pipelines in a much more sensible fashion, getting more done per clock cycle.

One major advantage ATI's setup has over NVIDIA's design is that it can support anti-aliasing when running in a

true HDR mode. However, *Half-Life 2* is a bit of a halfway house when it comes to HDR implementation, so in fact both NVIDIA and ATI will support AA in HDR mode. We are sure this will play a greater role in future games, however.

It's a bit on the noisy side, however. The reference cooler that is used by almost all X1800 cards is very much on the whiny side, and wouldn't last

DETAILS

Core X1800XL
Memory size 256MB
Pixel pipelines 16
Vertex units 8
Shader model 3.0
Core Frequency 500
Memory frequency 495 (990)
Core overlocked 550
Memory overlocked 700 (1,400)

BENCHMARK

Half-Life 2 1,280x1,024 2xAA 2xAF 47.2
Half-Life 2 1,600x1,200 4xAA 8xAF 32.0
Quake IV 1,280x1,024 2xAA 2xAF 77.4
Quake IV 1,600x1,200 4xAA 8xAF 52.9
F.E.A.R. 1,280x960 2xAA 2xAF 42.5
F.E.A.R. 1,600x1,200 4xAA 8xAF 20.5
3D Mark 05 6970

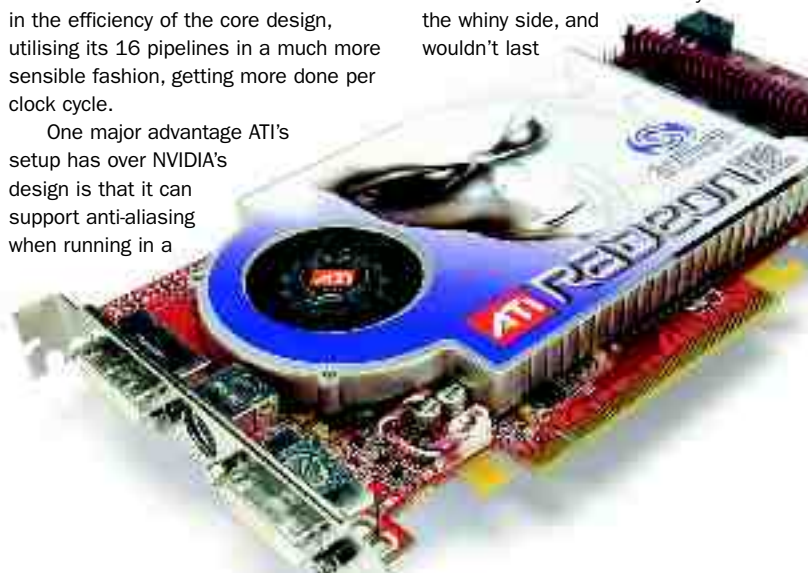
long in our office rigs before being replaced with an Arctic Cooling Silencer.

What is interesting to see is how far this card overclocks, with a 40% overclock on memory, bringing it considerably closer to X1800XT speeds. This factor alone may be enough to win over the value conscious.

Performance in comparison to the 7800 GT is too close to call. But with overclocking offering nearly a 20% improvement in performance, ATI might just have the edge.

At £234, it is almost £40 cheaper than the MSI 7800 GT, and on a par with some other manufacturers' 7800 GTs; There are very few reasons why that extra £40 should be spent. The Sapphire bundle is as usual excellent, with high quality cables and a selection of games to keep you going.

89% PCF says... "An excellent balance of price and blistering 3D performance."





MSI NX7800GT-VT2D256E

Price £271 **Web** www.msi-computer.co.uk

When the 6800GT was launched, it turned heads with its awesome speeds and value for money. The 7800GT is a little less awe-inspiring, with its minor tweaks here and there and extra four pipelines bolted onto the die.

Thankfully, technology is irrelevant in the gaming world, where performance speaks for itself. One area that NVIDIA has the upper hand in is OpenGL games. This talent is somewhat accentuated by *Quake IV*'s optimisations for NVIDIA's UltraShadow technology. *Quake IV* performance is around 10-15% faster than an X1800XL, until we start to reach the higher resolutions. It is possible that our 3.8GHz processor is holding back performance, but this is one of the fastest CPUs on the market so if this is the case, most people will have similar problems.

All other performance scores are almost neck and neck with the X1800XL, including overclocking scores. Despite only overclocking by an extra 200MHz on

DETAILS

Core 7800 GT

Memory size 256MB

Pixel pipelines 20

Vertex units 7

Shader model 3.0

Core frequency 400

Memory frequency 500 (1,000)

Core overclocked 490

Memory overclocked 600 (1,200)

BENCHMARK

Half-Life 2 1,280x1,024
2xAA 2xAF 48.3

Half-Life 2 1,600x1,200
4xAA 8xAF 35.7

Quake IV 1,280x1,024
2xAA 2xAF 85.7

Quake IV 1,600x1,200
4xAA 8xAF 51.5

F.E.A.R. 1,280x960 2xAA
2xAF 43.0

F.E.A.R. 1,600x1,200
4xAA 8xAF 21.0

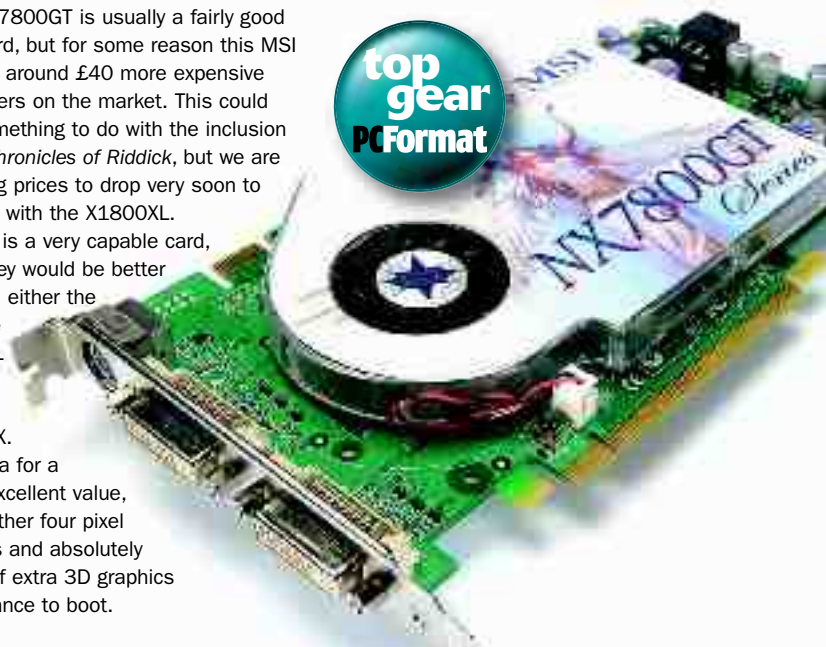
3D Mark 05 6742

the memory – compared to the 400MHz of the Sapphire X1800XL – it yielded a 20% increase in output. Something for nothing is always a bonus.

The 7800GT is usually a fairly good value card, but for some reason this MSI model is around £40 more expensive than others on the market. This could have something to do with the inclusion of *The Chronicles of Riddick*, but we are expecting prices to drop very soon to compete with the X1800XL.

This is a very capable card, but money would be better spent on either the Sapphire X1800XL or the Forza 7800GTX. £30 extra for a GTX is excellent value, with another four pixel pipelines and absolutely oodles of extra 3D graphics performance to boot.

82% **PCF says...** "An excellent card, but considering its competition in this test, it's too expensive."



HIS X1800XL

Price £271 **Web** www.hisdigital.com

We always find it a little frustrating when a new graphics core is launched as most of the first cards that come in are all reference cards run off the same line, with a manufacture's sticker put on the top. Unfortunately for HIS, this is no exception. If this was put side-by-side with the Sapphire X1800XL, you'd struggle to tell the difference. That is not to say that this card is bad, or inferior to the other X1800XLs in this test, but merely that it is not unique in any way.

When a card is as similar as this,

the decision really comes down to other factors. The biggest factor is, of course, money. In this particular scenario, paying almost an extra £40 reduces you to a no-games bundle and a card that overclocks slightly better.

As is the nature of overclocking, a



DETAILS

Core X1800XL

Memory size 256MB

Pixel pipelines 16

Vertex units 8

Shader model 3.0

Core frequency 500

Memory frequency 495 (990)

Core overclocked 550

Memory overclocked 750 (1,500)

BENCHMARK

Half-Life 2 1,280x1,024
2xAA 2xAF 47.3

Half-Life 2 1,600x1,200
4xAA 8xAF 32.1

Quake IV 1,280x1,024
2xAA 2xAF 77.4

Quake IV 1,600x1,200
4xAA 8xAF 53.0

F.E.A.R. 1,280x960 2xAA
2xAF 41.0

F.E.A.R. 1,600x1,200
4xAA 8xAF 20.0

3D Mark 05 7011

lot of it really does come down to luck of the draw. This HIS card does nothing differently over the Sapphire or Club3D to earn its extra 100MHz and you have just as much chance of getting the same performance out of any of them.

HIS is much better known for its ICEQ range of cards, which come with an Artic Cooling Silencer pre-installed and slightly higher clock speeds. These are definitely worth looking out for as they are virtually silent and cope with heat considerably better. These will usually retail for a slightly higher price, but are certainly a viable alternative.

At £271, this is one of the pricier X1800XL cards and is identical in price to the MSI 7800GT. The GT has a slight but negligible performance edge, but if you see it reduced in a sale in the New Year, this is worth considering.

77% **PCF says...** "An excellent and high-specced card, but not as cheap as the Sapphire."



Club3D X1800XL

Price £279 Web www.club3d.nl

The Club3D X1800XL is yet another X1800XL card with the same reference design, almost identical performance, and unfortunately for Club3D, in this case the lowest overclocking results of the three tested here. As mentioned before, this really does come down to the luck of the draw, and there is a high chance that the next Club3D card may overclock better. There is definitely a general consensus that the X1800XL is fairly overclockable. With the difference between the X1800XL and XT being clock speeds and an extra 256MB of memory, it is possible to at least get closer in frequency alone.

The bundle with this card is similar to the Sapphire, in the respect that all the cables are very high quality. The games bundle is also pretty good, with Colin McRae 2005 included, which is an excellent game. The second game included is not one we are greatly familiar with – WWF Panda Junior. This is an adventure game aimed at 6-9 year olds, a little bit of a demographics

DETAILS

Core	X1800XL
Memory size	256MB
Pixel pipelines	16
Vertex units	8
Shader model	3.0
Core frequency	500
Memory frequency	495 (990)
Core overclocked	550
Memory overclocked	650 (1,300)

BENCHMARK

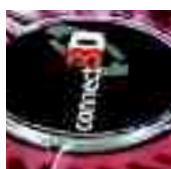
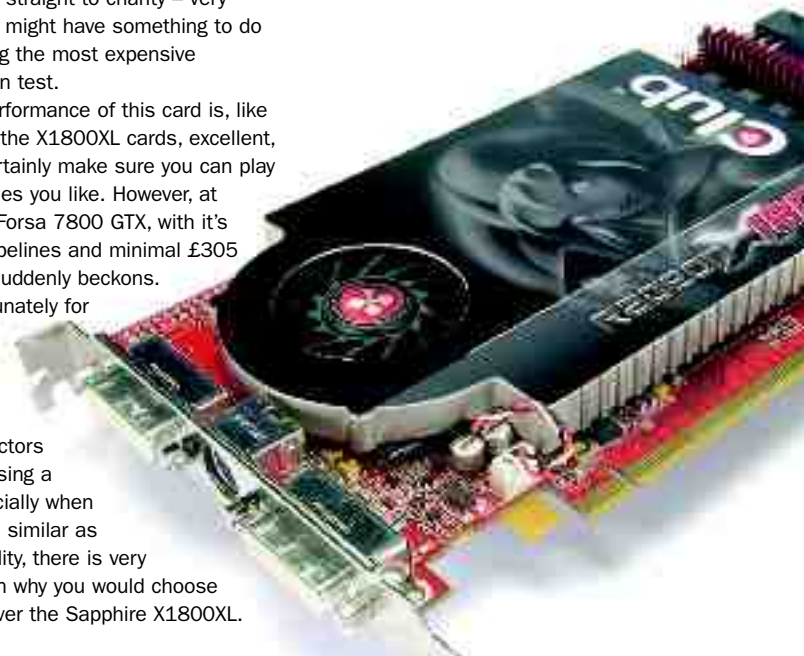
Half-Life 2 1,280x1,024 2xAA 2xAF	47.1
Half-Life 2 1,600x1,200 4xAA 8xAF	32.1
Quake IV 1,280x1,024 2xAA 2xAF	77.4
Quake IV 1,600x1,200 4xAA 8xAF	53.0
F.E.A.R. 1,280x960 2xAA 2xAF	41.8
F.E.A.R. 1,600x1,200 4xAA 8xAF	20.3
3D Mark 05	6990

mismatch for this particular card. However, the reason for its inclusion is that the money it costs to include the game goes straight to charity – very noble. This might have something to do with it being the most expensive X1800XL on test.

The performance of this card is, like the rest of the X1800XL cards, excellent, and will certainly make sure you can play all the games you like. However, at £279, the Forza 7800 GTX, with its 24 Pixel Pipelines and minimal £305 price tag, suddenly beckons.

Unfortunately for Club3D, money is one of the biggest deciding factors when choosing a card, especially when they are as similar as this. In reality, there is very little reason why you would choose this card over the Sapphire X1800XL.

79% PCF says... "An excellent card with a slightly elevated price, but a nice bundle."



Connect3D X850XTPE

Price £292 Web www.connect3d.com

Considering that this Supertest is sorted in ascending price order, if you were going to see a previous-generation card show up, you'd expect to see it quite early on. Unfortunately for Connect3D, this is not the case, with the X850XT PE – the king of the last generation of cards – being nearly £60 more expensive than the Sapphire X1800XL.

On paper, you can see the specifications are very similar to an X1800XL, with 16 pixel pipelines, but two less vertex units. In order to compete with the 6800 Ultra, this card had to be clocked incredibly high. This meant

there was little headroom for overclocking, but we still saw a 6-8% performance boost.

What is most disconcerting about this card is the size of its cooling system. It spans two expansion slots and makes more noise than a rabid cat with its tail nailed to a piece of wood. It's entirely unsuitable for anyone considering an upgrade to their SFF PC.

DETAILS

Core	X850XTPE
Memory size	256MB
Pixel pipelines	16
Vertex units	6
Shader model	2.0
Core frequency	540
Memory frequency	590 (1180)
Core overclocked	580
Memory overclocked	625 (1,250)

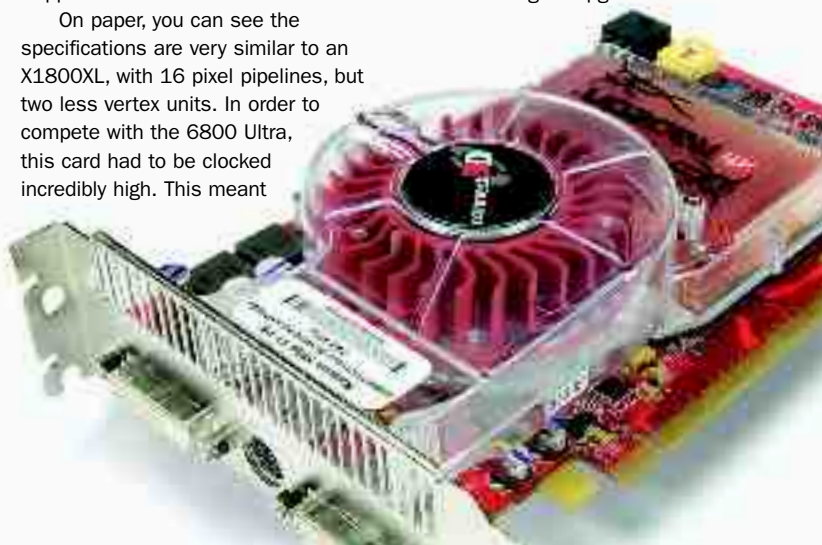
BENCHMARK

Half-Life 2 1,280x1,024 2xAA 2xAF	43.1
Half-Life 2 1,600x1,200 4xAA 8xAF	24.7
Quake IV 1,280x1,024 2xAA 2xAF	69.7
Quake IV 1,600x1,200 4xAA 8xAF	42.5
F.E.A.R. 1,280x960 2xAA 2xAF	40.5
F.E.A.R. 1,600x1,200 4xAA 8xAF	18.5
3D Mark 05	6375

Performance is remarkably close to that of the X1800XL, with the major difference being in the OpenGL *Quake IV* where we see as much as 25% difference in speed. This significant performance gap may well disappear as new drivers are released. However, the lack of Pixel Shader 3.0 support may well be its undoing.

This superceded graphics card is not worth considering. There's no reason to buy this over an X1800XL. It's inelegant, with its clock-me-higher-and-higher approach, instead of the efficient approach of the new X1800 design. However, it does serve well to illustrate the performance difference between the two cards – and it's not as great as one might think. Therefore, if you currently own one of these cards, upgrading would be a pretty futile endeavour.

65% PCF says... "Decent results, but it lacks Shader 3.0 support, and is noisy and expensive."





Forsa 7800GTX

Price £306 Web www.forsa.com.hk



The 7800GTX is similar in design to the 7800GT, but superior in every way. To start with, we have an extra four pixel pipelines, increasing it to a whopping 24 and we also see an extra vertex unit. Not content with that, we also see an increase in clock speeds with another 200MHz on the memory and 30MHz on the core. The effects of this are quite apparent in the benchmarks, with a 10-20% overall performance increase. With overclocking, we can see another 15-20%.

In reality, this boost in performance is nowhere near as much as you'd expect for such an increase in architecture. One could almost suggest that something else is holding back the card's performance. It may be that current games aren't properly taking advantage of the card's potential, and that newer games will show a more profound difference.

The card itself is very much based on the NVIDIA reference design, without so much as an attempt to put a sticker

DETAILS

Core 7800GTX
Memory size 256MB
Pixel pipelines 24
Vertex units 8
Shader model 3.0
Core frequency 430
Memory frequency 600 (1,200)
Core overclocked 500
Memory overclocked 675 (1,350)

BENCHMARK

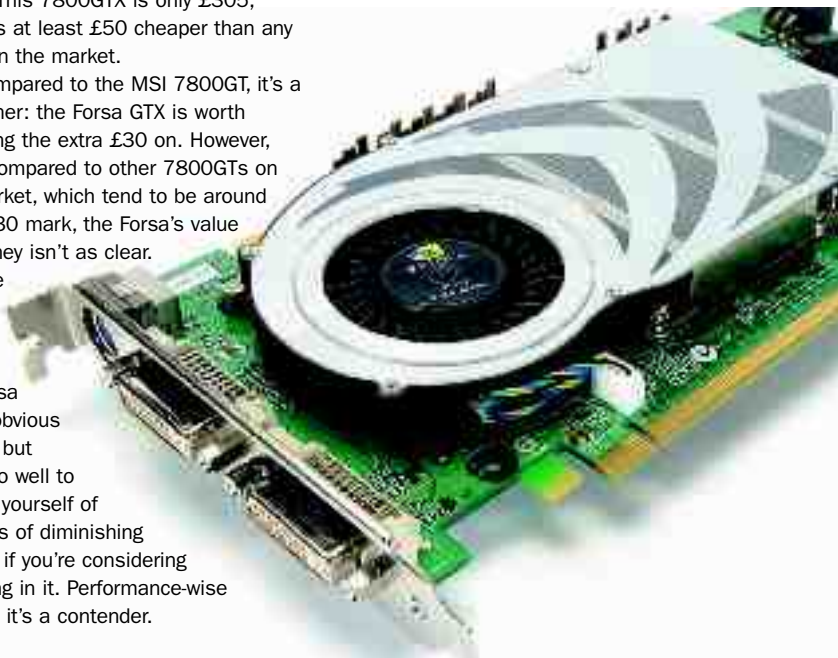
Half-Life 2 1,280x1,024 2xAA 2xAF 54.8
Half-Life 2 1,600x1,200 4xAA 8xAF 41.6
Quake IV 1,280x1,024 2xAA 2xAF 101.8
Quake IV 1,600x1,200 4xAA 8xAF 61.6
F.E.A.R. 1,280x960 2xAA 2xAF 56.0
F.E.A.R. 1,600x1,200 4xAA 8xAF 26.0
3D Mark 05 7,383

on it. We tend to think Forsa have taken the right approach by keeping the bundle to a minimum and playing the price game. This 7800GTX is only £305, which is at least £50 cheaper than any other on the market.

Compared to the MSI 7800GT, it's a no-brainer: the Forsa GTX is worth spending the extra £30 on. However, when compared to other 7800GTs on the market, which tend to be around the £230 mark, the Forsa's value for money isn't as clear.

If you're after a 7800 GTX, the Forsa is the obvious choice, but you'd do well to remind yourself of the laws of diminishing returns if you're considering investing in it. Performance-wise though, it's a contender.

90% PCF says... "High performance, and it's the cheapest 7800 GTX out there."



Radeon X1800XT Reference

Price £375 Web www.ati.com

Years ago, some manufacturers used to increase a card's frame buffer – say from 128MB to 256MB – by putting cheaper, lower-speed memory on the board. This meant the card was actually slower, but stood out in the crowd because it had 256MB. Stupidly, people would then buy these allegedly superior cards, expecting them to be double the speed of their genuinely advertised rivals.

The Radeon 1800XT is one of the first exceptions to this rule, with a 512MB frame buffer instead of the usual 256MB. This, coupled with high core and memory

speeds, means the performance of this card is really very good. Whether the speed increase is in part due to the extra frame buffer is questionable, but with games such as *Quake IV* requiring 512MB in order to use the highest quality settings, we're positive the benefits are related.

With most top-spec cards, overclocking is fairly limited as they're

DETAILS

Core X1800XT
Memory size 512MB
Pixel pipelines 16
Vertex units 8
Shader model 3.0
Core frequency 625
Memory frequency 750 (1,500)
Core overclocked 735
Memory overclocked 800 (1,600)

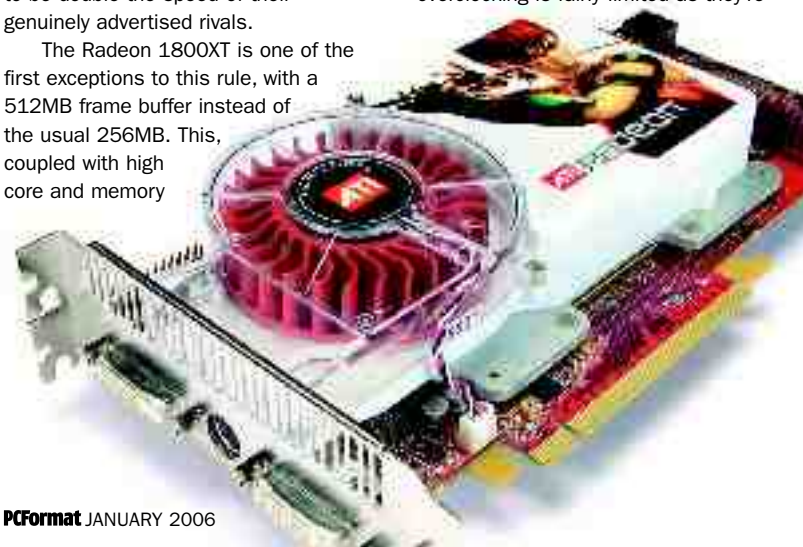
BENCHMARK

Half-Life 2 1,280x1,024 2xAA 2xAF 54.9
Half-Life 2 1,600x1,200 4xAA 8xAF 41.2
Quake IV 1,280x1,024 2xAA 2xAF 100.0
Quake IV 1,600x1,200 4xAA 8xAF 70.4
F.E.A.R. 1,280x960 2xAA 2xAF 54.0
F.E.A.R. 1,600x1,200 4xAA 8xAF 28.0
3D Mark 05 7912

generally already pushing the envelope somewhat. However, we saw an extra 100MHz on the memory and an amazing jump to 735MHz core speed. This gave a 10% performance increase.

What is most noticeable, however, is how similar the performance is compared to the Forsa 7800GTX. Only one or two frames per second separate the benchmarks. For an extra £70, you'd expect more than just a match in graphics performance. It's ahead of the X1800XL by 20%, but only offers a small increase for a large amount of extra money. A downside to the increase in clock speeds is that the cooler is a larger version of the X850XT PE cooler, taking up two slots, with a fan that will grind your lugs down very quickly. If you are averse to fan noise, you will not enjoy this card.

72% PCF says... "Fast, expensive and noisy – plump for a 7800GTX instead"





Asus N7800GTX TOP

Price £384 Web www.asus.com.tw



The benefits of a pre-overclocked graphics card are obvious. Instead of spending your time fiddling to find the most stable speeds possible, and perhaps needing to compensate for extra heat production, it works straight out of the box, giving you that little bit of extra performance. Not only that, but it's guaranteed! This is nice, but is it really worth spending another £80 for the privilege? Buying a pre-overclocked card has a similar feel to buying a car that has already been tweaked and modified – it's just not as rewarding as doing it yourself, and you pay through the teeth.

It's interesting to note that the clock speeds the Asus 7800 GTX TOP flaunts are easily attainable by the Forza 7800 GTX. In fact, the Forza card was able to overclock a little further than the Asus. The Asus card was only able to produce an extra 50Mhz on the memory, showing how close to the edge it was already running. This yielded a disappointing 2% increase in performance.

DETAILS

Core 7800GTX

Memory size 256MB

Pixel pipelines 24

Vertex units 8

Shader model 3.0

Core frequency 486

Memory frequency 675 (1,350)

Core overclocked 490

Memory overclocked 700 (1,400)

BENCHMARK

Half-Life 2 1,280x1,024 2x 57.1

Half-Life 2 1,600x1,200 4x 45.2

Quake IV 1,280x1,024 2x 111.1

Quake IV 1,600x1,200 4x 69.3

F.E.A.R. 1,280x960 2x 61.5

F.E.A.R. 1,600x1,200 4x 30.0

3D Mark 05 7804

This extra clock speed does in fact make it faster than the X1800XT, which has a very similar price tag. A games bundle is included, but they're all fairly unassuming titles, as you'd expect with most bundles. A leather CD wallet is included for that extra panache, but really, who cares?

What does make this card unique is the cooling system. Instead of using the reference NVIDIA heatsink, it uses the much acclaimed Arctic Cooling Silencer. This not only keeps the card very cool, it's virtually silent.

At £383 this card is very expensive. However, bar the 7800 GTX 512MB, which is £120 more expensive, it's still the best performing card on the market straight out of the box.

81% PCF says... "A speedy pre-overclocked card, and silent. But you pay for the privilege."



7800 GTX 512MB Reference

Price £500 Web www.nvidia.com

This card boasts some serious specs. 1.7GHz on the memory clock is insanely fast, and coupled with a 550MHz core speed, it should snigger haughtily in the direction of a standard 7800 GTX. It wasn't all that surprising, then, to see a 20-50% improvement in performance, depending on the game. To find that the card also overclocked, yielding another 10% performance increase, was astonishing.

But still, we can't help but wonder if something else is limiting the benchmark scores of this card. Is a single 3.8GHz Pentium 4 really enough to power a card as hungry as this one? As most games aren't designed to

take advantage of dual-core processors just yet, this is probably one of the best processors for the job. Besides, do you have a faster processor than this? Perhaps the 7800 GTX 512MB is a little before it's time and won't be appreciated until further down the line.

As a reference card, there is no bundle to speak of; you'll have to check retail packages to see what comes with

DETAILS

Core 7800GTX

Memory size 512MB

Pixel pipelines 24

Vertex units 8

Shader model 3.0

Core frequency 550

Memory frequency 850 (1,700)

Core overclocked 620

Memory overclocked 925 (1,850)

BENCHMARK

Half-Life 2 1,280x1,024 2xAA 2xAF 60.2

Half-Life 2 1,600x1,200 4xAA 8xAF 50.2

Quake IV 1,280x1,024 2xAA 2xAF 124.9

Quake IV 1,600x1,200 4xAA 8xAF 89.2

F.E.A.R. 1,280x960 2xAA 2xAF 67.5

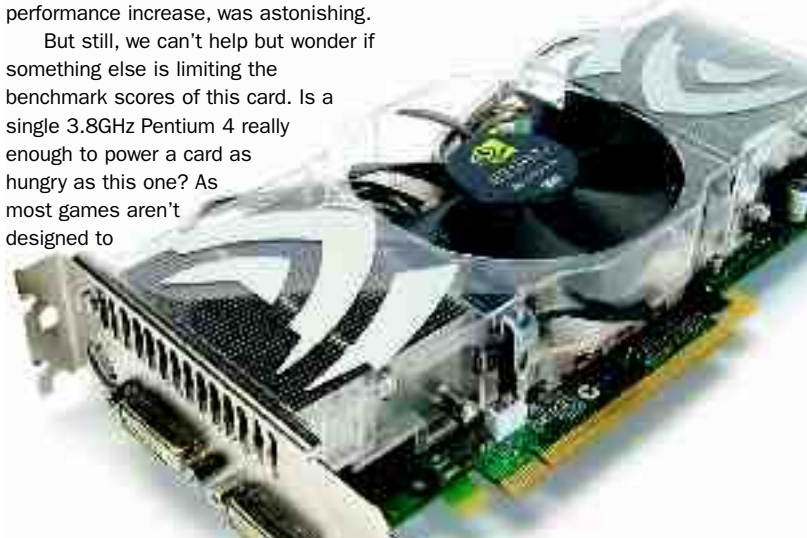
F.E.A.R. 1,600x1,200 4xAA 8xAF 35.0

3D Mark 05 8094

them instead. What's different about this card in comparison to the 7800 GTX is the use of a dual-slot cooler. This has an 80mm fan in the middle and is an excellent design. It is every bit as quiet as the Arctic Cooling Silencer installed on the Asus 7800 GTX. It absolutely blows the unbearably noisy X1800XT out of the water.









The reason this score differs from our technology test last month, though, is that £500 is a shocking price for any graphics card, and we would find it hard to suggest that someone should buy this over other cards in the test. A similar amount of money would be better spent upgrading other aspects of your system; perhaps a new monitor to truly appreciate your games? Unless you simply *must* have the best, we urge you to look elsewhere until prices drop.

73% PCF says... "Incredible performance, but ridiculously expensive. A toy for the rich."



SPECIFICATIONS AND PERFORMANCE

All the details and small print you need, in one table

	£170 XFX 6800GS	£234 Sapphire X1800XL	£271 MSI NX7800 GT-VT2D256E	£271 HIS X1800XL	£279 Club3D X1800XL
	86% 	89% 	82% 	77	79%
					
MANUFACTURER WEB SITE	www.xfxforce.com	www.sapphiretech.com	www.msi-computer.co.uk	www.hisdigital.com	www.club3d.nl
CORE	6800GS	X1800XL	7800GT	X1800XL	X1800XL
MEMORY SIZE	256MB	256MB	256MB	256MB	256MB
PIXEL PIPELINES	12	16	20	16	16
VERTEX UNITS	5	8	7	8	8
SHADER MODEL VERSION	3.0	3.0	3.0	3.0	3.0
CORE FREQUENCY	485	500	400	500	500
MEMORY FREQUENCY	550 (1,100)	495 (990)	500 (1,000)	495 (990)	495 (990)
CORE OVERCLOCKED	500	550	490	550	550
MEMORY OVERCLOCKED	650 (1,300)	700 (1,400)	600 (1,200)	750 (1,500)	650 (1,300)
BUNDLED GAMES	Far Cry	Tony Hawk's Underground 2, Prince of Persia: Warrior Within, Brothers in Arms: Road to Hill 30 and Richard Burns Rally (choose two)	Chronicles of Riddick	None	Colin McRae 2005, WWF Panda Junior
BUNDLED CABLES	PCI-E Power, S-Video	PCI-E Power, Composite, S-Video	PCI-E Power, S-Video	PCI-E Power, S-Video, Composite	PCI-E Power, Composite, S-Video
CONNECTIONS	S-Video Out, 2 x DVI	Composite In/Out, S-Video In/Out, 2 x DVI	Composite In/Out, S-Video In/Out, HDTV Output, 2 x DVI	Composite In/Out, S-Video In/Out, HDTV Output, 2 x DVI	Composite In/Out, S-Video In/Out, HDTV Output, 2 x DVI
3D MARK 05					
1,024, 0xAA 0xAF	5729	6,970	6,742	7,011	6,990
OVERCLOCKING % INCREASE					
HALF-LIFE 2	5%	10%	16%	10%	9%
QUAKE IV	7%	15%	20%	14%	11%
F.E.A.R.	6%	17%	19%	25%	19%
3D MARK 05	5%	8%	13%	7%	6%

PCFVerdict

The best of the best

The raw performance of the cards in this Supertest is very close indeed. If you went out and bought any of them, you'd be able to play the very latest in computer games, and expect great speed and visuals. What's more

astonishing is how much price variance there is in the market for what are virtually identical cards. The Forza 7800GTX scored extremely well, due to the basic bundle and low price. Most people end up throwing the extra cabling in the

attic anyway, so why waste money on clutter?

The Sapphire X1800XL also did very well, with superb performance and overclocking, very competitive pricing and even a

NEXT MONTH
10 HIGH PERFORMANCE MOBOS FOR ATHLON AND P4 SYSTEMS

£292
Connect3D
X850XTPE

65%


£306
Forsa 7800
GTX

90%

gold
PCFormat
£375
Radeon
X1800XT
Reference

72%


£384
Asus N7800
GTX TOP

81%

top
gear
PCFormat
~£500
7800 GTX
512MB
Reference

73%



	www.connect3d.com	www.forsa.com.hk	www.ati.com	www.asus.com.tw	www.nvidia.com	MANUFACTURER WEB SITE
	X850XTPE	7800GTX	X1800XT	7800GTX	7800GTX	CORE
	256MB	256MB	512MB	256MB	512MB	MEMORY SIZE
	16	24	16	24	24	PIXEL PIPELINES
	6	8	8	8	8	VERTEX UNITS
	2.0	3.0	3.0	3.0	3.0	SHADER MODEL VERSION
	540	430	625	486	550	CORE FREQUENCY
	590 (1,180)	600 (1,200)	750 (1,500)	675 (1,350)	850 (1,700)	MEMORY FREQUENCY
	580	500	735	490	620	CORE OVERCLOCKED
	625 (1,250)	675 (1,350)	800 (1,600)	700 (1,400)	925 (1,850)	MEMORY OVERCLOCKED
	None	None	None	<i>PowerDrome: Race of Champions, Second Sight, Chaos League, Snowblind, Xpand Rally</i>	N/A	BUNDLED GAMES
	PCI-E Power, Composite, S-Video	PCI-E Power, S-Video	N/A	None	N/A	BUNDLED CABLES
	Composite In/Out, S-Video In/Out, HDTV Output, 2 x DVI	S-Video Out, Composite Out, HDTV Out, 2 x DVI	2 x DVI	S-Video Out, Composite Out, HDTV Out, 2 x DVI	2 x DVI	CONNECTIONS
	6,375	7,383	7,912	7,804	8,094	3D MARK 05 1024, 0xAA 0xAF
	7%	12%	8%	2%	7%	OVERCLOCKING % INCREASE HALF LIFE 2
	8%	16%	11%	2%	9%	QUAKE IV
	8%	19%	11%	3%	11%	F.E.A.R.
	6%	7%	3%	1%	3%	3D MARK 05

very generous bundle. Everything about the card was spot-on.

The XFX 6800GS turned some heads with its value for money. For only £170 you get good games performance. If you have an older processor that might hold back a newer graphics card, this might be a good middle ground. When working to a budget, £30 or £60 can make all the difference.

Of course, we can't conclude a 3D cards Supertest without mentioning the 7800GTX 512MB, with its insanely high clockspeeds and

performance to match, almost doubling the speed of the 6800GS.

That said, for the time being, it's probably out of most potential customers' price brackets, but quite proudly the best graphics card out there.

Overall, that Forsa is very hard to fault. It's the cheapest 7800GTX around, and so long as you don't care what comes in the bundle, you'll be very pleased with the results. **PCF**



**The Forsa's
bundled kit won
it this Supertest.**

How to buy...



Al Bickham
SEES IN RED AND GREEN

Grappling with the numbers of the beast

Big technology announcements are like buses; large, red and noisy. And so we come to news from the Canadian camp, and the future of the X1800XT – the R520-based card that has both surprised and disappointed. It's very powerful, granted, but waaay too expensive. Hot on its heels, We've just discovered the launch of R580 will be the new year. In many ways it'll be similar to R520 – 16 pixel pipelines, 16 texture units, 16 ROPs and eight vertex units. The difference is that there are three pixel shaders per pipeline. That's 48 shaders. Senseless numerical word-noise? Possibly. But it also means that R580 can ejaculate more pixels per picosecond than any card yet conceived. The proof, as ever, is in the railgunning, and I for one shall be chuffed with my 7800GTX for some time to come (though if a wealthy mystery relative opts to croak, I'll have few qualms about ploughing the family fortune into a sibling GTX for SLI lunacy). R580 is going to be a very powerful core indeed. Given ATI's annus horribilis and the Benny Hill antics of CrossFire, there's hearts and minds that need winning back from team green.

PCFormat How to buy kit

ESSENTIAL BUYING ADVICE

Welcome to the PCFormat Buyers' Guide. Over the next few pages, we'll arm you with the information you need to know when you're shopping for PC parts: where to go, what to buy and, crucially, the concepts involved in each key component. Knowledge is power – especially when you're armed with a wallet full of hard-earned notes and you want the best on offer.

Talking of the best, there's never been a better time to buy a new graphics card. Prices are at an all-time low, while performance is at an all-time high. Examples of the 6600GT can be found for under a hundred quid, while an X800 GTO will set you back just £125. If it's more power you want, short of plumping for super high-end cards, the price sweetspot is with the cheapest 7800GTs, and the new 6800GS from NVIDIA – a mid-price reworking of the famously excellent 6800GT. Turn over for more details...

For a complete reviews database visit www.pcformat.co.uk

Jargon Buster

Making sense of the noise

Pipeline panic

GPUs have different numbers of pixel pipelines. Generally speaking, the more the better; however, that's changing as ATI is now using fewer but broader pipes.

Latently obvious

Memory access speed is measured in CAS latency, (Column Address Strobe) or CL – the lower the better. Really fast RAM is CL2 so, when buying, get the fastest you can. Note that DDR still features lower CL than DDR2.

Cache machine

The L2 cache of a CPU is a small block of superfast RAM dedicated to the CPU. Here, the CPU stores recent calculations so it doesn't have to keep doing them. Forget processor speeds: L2 cache size is the major difference between Pentium and Celeron performance.

Panel beater

The millisecond rating of an LCD monitor isn't the only mark of quality. Check the brightness of the panel too. You can game quite happily on a 12ms monitor.

Power supply

Every component needs electricity, and the PSU is where it comes from. When shopping for a new one, ensure it has the right connectors and is a reliable brand. Never opt for less than a 350W model.

Cooling

Your CPU is the toastiest component in your PC. Stock coolers tend to be a bit noisy and not as efficient as they could be, so shop around. Look for big, slow-moving fans, which are cooler and quieter than little ones.

Graphics card

Does your mobo support AGP, or the newer PCI Express standard? Ensure you've got the right card for the slot, and check overleaf for the best cards in every price category.

Turn to page 144

How to buy...

A bargain

Point your purse at this...

ACER E300

£610

Everyone wants an Athlon 64 system for gaming. And this beauty from Acer is an ideal platform upon which to build a monster games rig – all you need to do is upgrade the 3D card. That said, the 6600 is a pretty capable card in its own right, supporting Shader Model 3 as it does. Certainly, that Athlon 64 3500+ is ample for today's titles. It'll certainly cook more than equivalently priced Intel chips. A neat system all round.

Under the hood

CPU Athlon 64 3500+

Memory 1GB DDR 400

Video Card NVIDIA 6600 256MB

HDD 200GB SATA

Optical DVD RW

Monitor Acer 19" 8ms, 1280 x 1024

Speakers 2.1 desktop

Input Keyboard/optical mouse



Optical drive

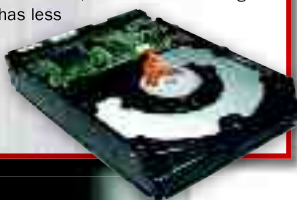
Selecting an optical drive really is a no-brainer these days. Thanks to mass production and streamlining of fabrication techniques, you can now pick up a fast, dual-layer DVD writer, such as the NEC 3540 for about £30. Why bother with anything else?

Front panel controllers

There are loads of different front panel control modules available these days. They can do all manner of things, from monitoring onboard voltages to controlling fan speeds inside your case. It's a modder's paradise out there – check out some of the links to the right, and have a good browse of what's on offer.

Hard drive

Buy SATA over IDE? Not necessarily, the price difference is minimal, but so's the performance gap. High-capacity hard drives offer superior performance in both SATA and IDE flavours; denser data-stacking means the reader has less distance to travel, reducing seek-times. For best speeds, look for a buffer of 16MB+.



Chassis

There's a huge variety of chassis designs around, many of them under £50. The more expensive, fully-featured kind tend to come without PSUs however, so always read the description carefully. Aim for a chassis with a 'screwless' design, which features quick-release sides and snap-fit internals. Uncluttered innards means good airflow and cool-running parts, so look out for cases that have decent ventilation and cable management.

Recommended

Top PC and component stores

www.scan.co.uk

www.pcnextday.co.uk

www.savastore.co.uk

www.vadim.co.uk

www.nortekonline.co.uk

www.yoyotech.co.uk

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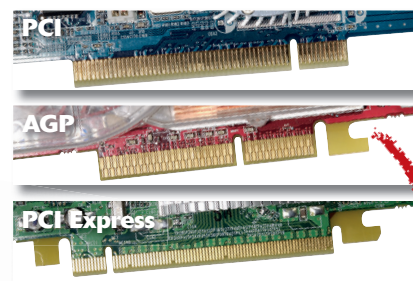
Turn
for the
rest

How to buy...

Graphics

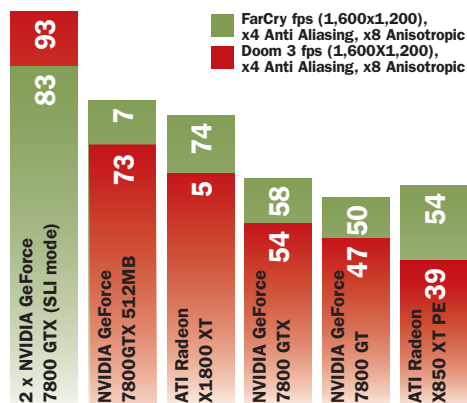
Courting media attention and costing the earth, the 3D card is the supermodel of components

Ever the limelight seeker, the graphics card is an essential part of any gaming rig. It's also a shopper's minefield. High-end cards are powerful yet shockingly expensive, but frequently don't warrant the outlay; today's whizzy budget cards, such as ATI's X800GTO and NVIDIA's 6600GT, are great performers for the price, and make more sense financially. Also worth noting, NVIDIA has lately revised its 7800 series with a new top-end card to compete with ATI's X1800XT. The top-end 7800GTX now has 512MB GDDR3 RAM, running at 1.6GHz.



Benchmarks

How the top cards stack up...



Active cooling

Fans and heatsinks are efficient, cost-effective and ubiquitous – though they can be noisy.

Passive cooling

Fanless coolers are silent, but run hotter than active cooling. Ideal for media centre PCs and silent setups, but not advised for overclocking.

Core speeds

The GPU (graphics processing unit) is the heart of the card. Clock speeds are measured in MHz... the higher the better.

Pixel shaders

A library of routines that enables the lighting and texturing of surfaces on a per-pixel basis, which makes for amazingly detailed visuals. The latest version – Shader Model 3.0 – enables techniques such as high dynamic-range lighting.

Pixel pipelines

The amount of data that can be put through a graphics card at once is partially governed by the number of pixel pipelines that a card boasts. The number of pipelines present on a graphics card reflects the number of pixels that the graphics card can process and render simultaneously in an highly optimised hardware stream.

PCFormat FAVOURITES... Graphics cards

The best cards that money can buy, in all the categories that count

>> Money no object



TOP SPEC

7800GTX 512 £~500 >> PCF182 92%
The high-end version of a high-end card, with massive clock and memory speeds. Just ahead of the X1800XT on performance, which makes it a winner.
NVIDIA >> www.nvidia.com

WE ALSO LIKE

X1800XT £470 >> PCF181 90%
GeForce 7800GT £230 >> PCF 179 90%



BEST BUY

Forsa 7800GTX £300 >> PCF183 89%
As good as any other GTX on the shelves, but the minimal bundle knocks this awesome card down to a mere £300 – £60 cheaper than other GTXs.
Nortek >> www.nortekonline.co.uk

WE ALSO LIKE

GeForce 6800GS £170 >> PCF183 86%
Radeon X1800XL £234 >> PCF183 89%

>> Sub £200



TOP SPEC

Sapphire X800 GTO2 £150
Featuring the core from the X850XT, this new mid-range card features awesome poke, and a price tag that won't make Richard Branson blush.
Sapphire >> www.sapphiretech.com

WE ALSO LIKE

NVIDIA 6800GS £169 >> PCF183 86%
Leadtek Winfast 6800 £150



BEST BUY

Radeon X800GT £110 >> PCF180 88%
Made by ATI partner Powercolor, this budget card is a bargain: an eight pixel-pipe version of the X800, with 256MB GDDR3. Plus, it overclocks well.
Powercolor >> www.power-color.com

WE ALSO LIKE

HIS X800GT IceQ 2 Turbo £130 >> PCF181 84%
Radeon X800 GTO £135

>> Sub £100



TOP SPEC

Gigabyte 6600GT £100
Incredible that such a cracking card can cost so little. It may struggle with high-end settings, but the 6600 fires on all cylinders at 1,024x768.
Gigabyte >> www.giga-byte.nl

WE ALSO LIKE

Abit RX700 LE Guru £78 >> PCF181 71%
Powercolor Radeon X600XT £76



BEST BUY

Sapphire X700 £60
With performance approaching that of NVIDIA's 6600 chipset, the Radeon X700 is a great budget choice, and Sapphire's offering is a bargain.
Sapphire >> www.sapphiretech.com

WE ALSO LIKE

Forsa 6600 £75 >> PCF181 70%
XFX 6600 LE £65

How to buy...

Processors

The core technology at the heart of every PC.
What to look for, how it works, and which to buy...

Your PC has a nervous system, consisting of three key components: the motherboard, the CPU (central processor unit) and the RAM (random access memory). Together, they dictate the basic performance of your PC.

General consensus – and raw figures – reflect that AMD Athlon 64 and Athlon FX-based systems are better for gaming than comparable Intel Pentium-based systems, while the latter tend to whip AMD chips for productivity and multimedia encoding/decoding. This is partly due to the memory controller setup (see right). Generally, AMD chips are clocked lower and are more efficient, while Pentium chips win on outright speed, and are therefore better for processor-intensive tasks.

Memory controllers

Athlon 64 CPUs have the memory controller on the CPU, whereas Pentiums have it on the northbridge of the motherboard. This lack of travel means that Athlon 64 chips use memory far more efficiently: DDR400 in an Athlon system works as well as DDR2 in an Intel system.

FSB

The Front Side Bus connects the CPU, RAM and motherboard, and is measured in MHz. The FSB represents the speed at which they all talk.

Dual-core

Basically two CPUs in one, the new dual-core CPUs multi-task like nothing else. They offer amazing performance, which is reflected in the price.

PCI Express

Designed to replace the PCI bus, PCI Express slots offer higher bandwidth and speed.

AMD & Intel

The two CPU giants both offer a broad range of chips, with prices to suit every pocket. If it's a gaming CPU you're after, the 64-bit Athlon and FX cores are excellent choices. If it's outright processing speed you want, get the latest Intel P4 Prescott cores. For mobile/media centre computing, the cool-running Pentium M is first choice.

ADVICE!

When upgrading your CPU and mobo, make sure you match the CPU with the socket on the board. Socket 754 and 939 for Athlon 64 and FX chips; Socket 775 for newer Pentium 4s.

PCFormat FAVOURITES... CPUs and Mobos

Essential components for your computing pleasure

>> CPUs



TOP SPEC

Athlon 64 X2 4800+ £622 >> PCF179 87%
It comprises two 90nm Athlon 64 cores running at 2.4GHz each, when just a single one would be nice. The X2 dines well on any game, gobbling high-def encoding with glee.

AMD >> www.amd.com

WE ALSO LIKE

Athlon 64 FX-57 £709 >> PCF180 80%
Athlon 64 3800 £234 >> PCF180 89%



BEST VALUE

Athlon 64 3200+ £130 >> PCF179 79%
2GHz may suggest an entry-level chip, but hand on heart, the 90nm 3200+ provides a wad of grunt designed to make gamers grin. And at £130, it's a shameless bargain to boot.

AMD >> www.amd.com

WE ALSO LIKE

Intel Pentium D 820 £175 >> PCF180 89%
Intel Pentium 4 650 £196 >> PCF180 74%

>> Motherboards



TOP SPEC

Abit Fatal1ty AN8-SLI £135 >> PCF177 84%
Aimed squarely at performance-demanding gamers, this Socket 939, NF0RCE 4 chipset board comes with an overclocking front-panel for your case. Extras include a 7.1 soundcard.

ABIT >> www.abit.com

WE ALSO LIKE

Sapphire PURE Innovation £141 >> PCF181 79%
Gigabyte GA-K8N Ultra 9 £87 >> PCF176 86%



BEST VALUE

Asus A8V Deluxe Wi-Fi £70 >> PCF174 79%
There are cheaper boards, granted, but this is today's performance at a reasonable price. A tasty bundled extra is the 802.11g wireless card and omni-directional receiver.

Gigabyte >> www.asus.com

WE ALSO LIKE

Foxconn 6150K8MA-8EKRS £76 >> PCF181 86%
ECS 661GX £50

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**Best prices
& availability
for all your
Components**



**Thermaltake
Tai Chi Silver/Black
Case (02220)**

£141.02

£165.70 Inc Vat

Thermaltake Case	£76.58
Lexa Classic Series(02017)	£89.99 Inc Vat
Thermaltake Case	£88.95
Kandalf Black (009564)	£104.52 Inc Vat
Thermaltake Case	£47.45
Tenor Silver (009927)	£55.75 Inc Vat
Silverstone Case	£153.18
LC14M (02057)	£179.99 Inc Vat



**Gigabyte
X800XL
PCI-E Graphics
Card (02144)**

£241.95

£284.94 Inc Vat

XFX Graphics Card	£327.84
7800GTX PCI-E (02326)	£385.21 Inc Vat
Gigabyte Graphics Card	£181.69
X800XL AGP (02204)	£189.99 Inc Vat
Asus Graphics Card	£284.25
EN7800GTX PCI-E (009962)	£333.99 Inc Vat
XFx Graphics Card	£112.99
6800XT PCI-E (02324)	£132.76 Inc Vat



**Zalman
CNPS9500-LED
Cooler
(02251)**

£31.50

£37.01 Inc Vat

Thermaltake Fan	£18.46
CL-P0037 (009999)	£21.69 Inc Vat
Gigabyte Cooler	£20.99
GH-PDU21-MF (009949)	£24.66 Inc Vat
Zalman Cooler	£139.99
RESERATOR 1 Plus(009909)	£152.73 Inc Vat
Vapochill Cooler	£17.01
06-L-0015 (009889)	£19.99 Inc Vat

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How to buy...

Monitors

What's the point in a £350 3D card if your screen's a munter? Go TFT – prices are lower, and quality higher than ever

The monitor is one of the single most important components of your PC setup. It's going to be displaying visuals for you for the next few years; that's why we always say secure the highest budget you can and shop very pickily within it. And don't be swayed simply by the response-time (ms) rating – if the fastest panel in the world has a low level of brightness and washed-out colour, it's about as useful as shoes on a snake. Wherever possible, try before you buy and check the panel against others in the same price-range. When you've found the one you like, shop around for the biggest bargain.

Look out for...

Crucial factors to bear in mind

Native resolution

Run an LCD at less than its native resolution, and things look mucky. Ideally, you want a resolution of 1,280x1,024 or better, backed by a 3D card that can broadcast at that size.

Response times

High response times mean reduced ghosting, and a ghost-free TFT is the gamer's holy grail. Look for panels with lower than 12ms ratings. Don't forget to check sharpness, text legibility and brightness though.

Brightness

A pin-sharp image is nothing without high-quality lamps in the back of the panel, zinging the visuals to life. A dull panel makes for drab graphics.

Colour fidelity

When trying out a monitor, take the colour reproduction into account, and check the panel against its price-bracket peers. If it's not putting out warm, vibrant colours, then move along: nothing to see here. This is where in-store beats online shopping.

Font of wisdom

Some TFT monitors, usually those of the 'cheap and cheerless' variety, suffer from a coarse pixel pitch. This results in poor font-rendering, which becomes painfully apparent while word processing or browsing the Internet, and can lead to a dose of eye-strain with extended use. Always check our reviews before splashing out, and try before you buy.



Size is everything

The bare minimum size for decent gaming is 19-inch, in our opinion, and if you budget £250-£350, you can guarantee a gorgeous screen that you'll be pleased to use for years. And if you buy one that's been on the market for the last six to 12 months, you're raising the odds of bagging a bargain still further.



ADVICE!

Any port in a storm? Wrong answer. DVI ports beat VGA ports with an effortless backhanded slap, so if you've DVI-out on your 3D card, make sure you get a monitor with DVI-in.

PCFormat FAVOURITES... Flat-panel monitors

From misers to millionaires, panels to suit every pocket

>> 17-inch monitors



TOP SPEC

Sony SDM-HS75P £299 >> PCF175 89%

Using Sony's XBlack screen technology, the HS75P is a 17-inch par excellence. It features a startlingly bright display with a decent response time and crystal-clear images – as well it should, for the £300 asking price.

Sony >> www.sonystyle.com

WE ALSO LIKE

Samsung Syncmaster 730MP £335 >> PCF177 78%
AG Neovo M17 £200



BEST VALUE

Digimate L1715 £140 >> PCF177 79%

Not a work of design that Philip Starck would gladly put his name to, but this Digimate monitor does the job on a budget, and it does it rather well. With a native resolution of 1,280x1,024 and being a pretty bright panel, it's great value.

Digimate >> www.digimate.com.uk

WE ALSO LIKE

Hyundai Imagequest B70A £168
Iiyama E437S-S £178

>> 19-inch and over



TOP SPEC

Dell 2405 FPW £670 >> PCF176 95%

Simply astounding. That's the only way to describe Dell's 24-inch monster. It boasts incredible performance in all areas, and a panel this big has to be seen to be believed. Incredibly, it's also around a third cheaper than other monitors its size.

Dell >> www.dell.co.uk

WE ALSO LIKE

BenQ FP91V+ £336 >> PCF177 87%
Viewsonic VX922 2ms £345 >> PCF183 82%



BEST VALUE

AG Neovo M-19 £290 >> PCF177 88%

Love or hate the design, the AG Neovo M-19 is bright, fast, and exhibits a subtle and tight level of image-control pretty much unmatched by its peers. It even rivals the Dell 2405 FPW for colour accuracy. For the price, it's a great performer.

AG Neovo >> www.neovouk.com

WE ALSO LIKE

AG-Neovo F-419 £210
Hyundai Imagequest L91A £215

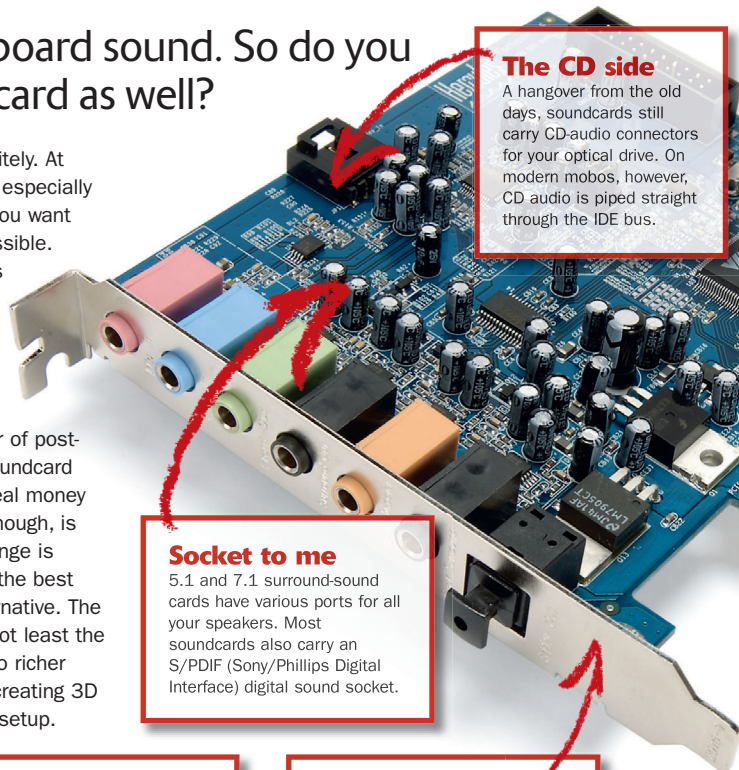
How to buy...

YOYO TECH

Soundcards

Every mobo has onboard sound. So do you really need a soundcard as well?

The simple answer is yes, definitely. At least if you value your ears, and especially if it's for a media centre PC, or you want the most immersive in-game audio possible. Onboard sound chips (made by various companies such as Realtek and Creative) may offer 5.1 and even 7.1 setups directly from your motherboard, but this technology tends to be several generations out of date and simply can't offer the number of post-processing effects that a dedicated soundcard boasts. The only company ploughing real money into soundcard research these days, though, is Creative, whose new X-Fi soundcard range is simply the bee's knees. If you're after the best sound possible, there's simply no alternative. The cards feature some amazing effects, not least the Crystallise function, which makes audio richer and sharper. X-Fi is also very good at creating 3D sound in a two-speaker or headphone setup.



The CD side

A hangover from the old days, soundcards still carry CD-audio connectors for your optical drive. On modern mobos, however, CD audio is piped straight through the IDE bus.

Socket to me

5.1 and 7.1 surround-sound cards have various ports for all your speakers. Most soundcards also carry an S/PDIF (Sony/Phillips Digital Interface) digital sound socket.

Box of tricks

The breakout box is the physical 'front end' of a modern soundcard. Some, such as the X-Fi Fatal1ty version, are designed to be mounted into a free 5.25-inch optical drive bay in your PC chassis, but there are others, like the one below, which happily sit on top of, or beside, your PC as standalone units. They give you access to controls including volume, balance, and tone. Don't choose a box over key features like Low SNR, 96KHz sampling and 24-67 DACs, though.



Remote access

Modern soundcards, especially those with breakout boxes, tend to come bundled with a remote-control handset, perfect for media centre setups, and for when your breakout box isn't to hand – under the table in your PC, for example.



**Best prices
& availability
for all your
Components**



**Aerocool
Gatewatch
Fan Controller**
(02243)

£26.77

£31.46 Inc Vat

Coolermaster Fan Controller	£37.67
Musketeeer 3 (02253)	£32.52 Inc Vat
Coolermaster Fan Controller	£19.65
Aerogate 3 (009786)	£23.10 Inc Vat
Thermaltake Fan Controller	£25.83
A1845 (009797)	£30.35 Inc Vat
Silverstone Fan Controller	£35.01
FP-52S (009680)	£29.39 Inc Vat



**Samsung
250GB SATAII
Hard Drive**
(02164)

£68.07

£79.99 Inc Vat

Samsung HDD	£56.17
200GB SATAII (02163)	£65.99 Inc Vat
Seagate HDD	£150.36
400GB SATA (009620)	£176.56 Inc Vat
Maxtor HDD	£70.23
300GB ATA133 (009920)	£82.53 Inc Vat
Western Digital HDD	£104.17
74GB SATA (00538)	£122.40 Inc Vat



**Cyber
Snipa Game
Pad Black**
(02240)

£18.15

£21.33 Inc Vat

Logitech Mouse	£38.10
G5 Laser (02187)	£44.76 Inc Vat
Logitech Mouse	£47.75
G7 Laser (03001)	£56.11 Inc Vat
Logitech Mouse	£27.48
Mediagray Cordless (009645)	£32.28 Inc Vat
Logitech Mouse	£38.07
MX518 (009646)	£32.99 Inc Vat



**Revoltec
Lightboard Advance
Keyboard Silver
USB (02238)**

£28.82

£30.33 Inc Vat

Saitek Keyboard	£23.95
PZ30AU Eclipse (01065)	£28.14 Inc Vat
Keysonic Keyboard	£16.16
ACK-620WK (009689)	£18.99 Inc Vat
Thermaltake Desktop	£19.41
A1807 (00312)	£22.80 Inc Vat
Logitech Desktop	£66.03
diNovo Cordless (009492)	£71.59 Inc Vat

PCFormat FAVOURITES... Sound hardware

Massage your inner ear with these tip-top items

>> Sound Cards



TOP SPEC

X-Fi Elite Pro £250 >> PCF179 90%
Creative's new flagship sound card line comes in four flavours with different price-points, but this is the all-singing version, complete with PCI card, breakout box and IR remote.
Creative >> www.creative.com

WE ALSO LIKE

X-Fi Fatal1ty FPS £180 >> PCF182 90%
Terratec Aureon 7.1 Universe £115



BEST VALUE

X-Fi Extreme Music £100 >> PCF179 82%
Most suited to media centres rather than gamers, as it doesn't carry XRAM like its pricier brothers. The budget X-Fi card still offers crystal sound with great effects.
Creative >> www.creative.com

WE ALSO LIKE

Terratec Aureon 7.1 PCI £75
Hercules Fortissimo 7.1 £35 >> PCF182 82%

>> Speakers



TOP SPEC

Gigaworks S750 £237 >> PCF157 88%
PC-audio champion Creative has come up trumps with the 5.1 S750, which brings crystal-clear sound at life-changing wattages. Look out for the new set in next month's PCF.
Creative >> www.creative.com

WE ALSO LIKE

Genius SW-5.1 Home Theatre £90 >> PCF181 82%
Creative I-Trigue 5600 £150



BEST VALUE

Logitech Z-3 £49 >> PCFPCF173 91%
A simple and stylish 2.1 setup which shatters the myth that cheap isn't cheerful. Crisp tones, resonant bass, glorious reproduction... and it looks beautiful, to boot.
Logitech >> www.logitech.co.uk

WE ALSO LIKE

Nortek Soundream 5.1 £40
Altec Lansing 151i £30

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How to buy...

Printers

For getting ink onto paper without making unsightly messes. Now for the science bit...

For general-purpose printing, a four-ink system usually provides greatest speed, with pigment-based inks for rich, solid blacks. It's impossible to recreate the real-world colours of photos using a four-ink process, so most photo inkjet printers use six or more inks to broaden the palette. These models still print general purpose documents, but tend to be slow and only manage greyish blacks. For ultimate versatility, most HP and Lexmark printers can switch between four and six inks by swapping the black cartridge for a photo cartridge. Another versatile range includes Canon's five-ink models, like the i865, iP4000 and the new iP4200 and iP5200 printers. These use both pigment-based and dye-based black inks in their line up, along with cyan, magenta and yellow dye-based inks.

Scanners

Most flatbed scanners use a conventional light-source consisting of a CCF (Cold Cathode Fluorescent) lamp, in conjunction with the same kind of CCD imaging sensor found in digital cameras. The alternative, used in some Canon models as well as the scanners in most MFD (or all-in-one multi-function) printers, is an LED light source as part of a CIS (Contact Imaging Sensor) system. This requires no warm-up time, and standalone CIS scanners can take all the power they need direct from the host PC's USB port, which does away the need for an extra power cable hanging over the back of your probably already cluttered desk.

Paper Guide

This A3+ photo printer can utilise variable paper widths. To reduce tracking errors, set the guide to the correct position for your paper width.

Output Tray

The output tray is where the printed paper comes out. Some also act as a platform for printing directly onto CDs and DVDs, for top quality movie collections.

Controls and Pictbridge

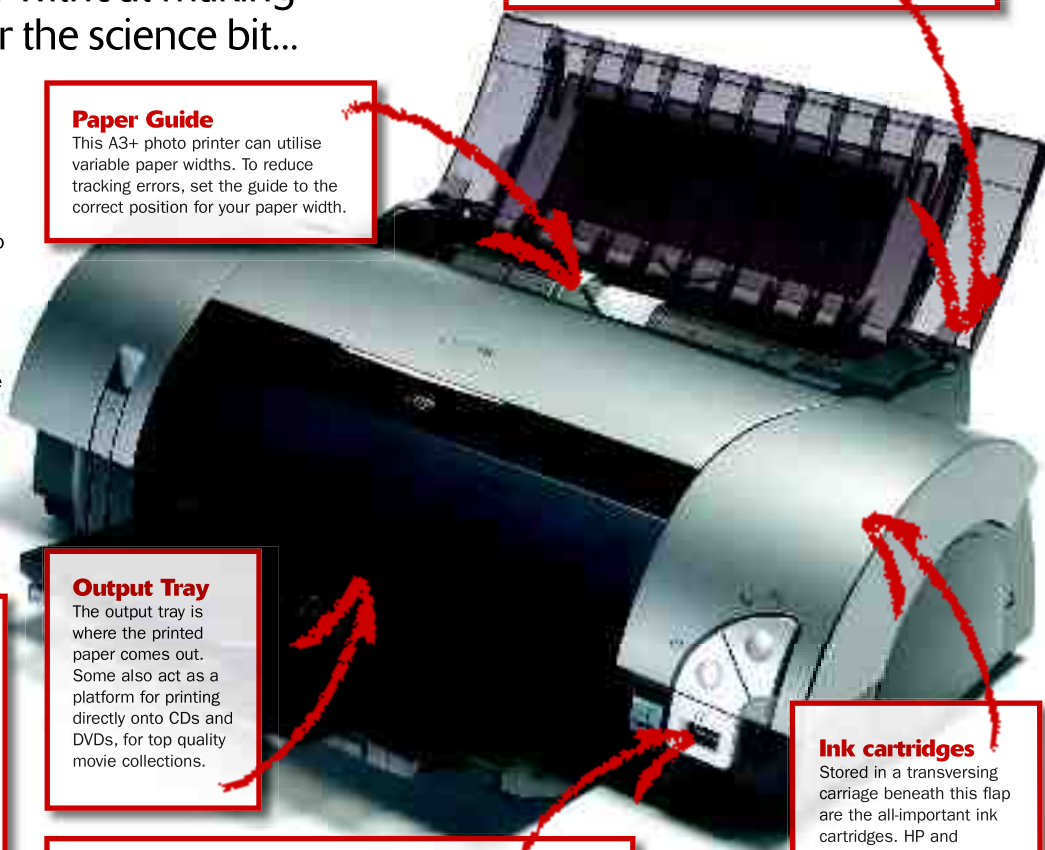
As well as rudimentary controls for switching the printer on and off, and for pausing and resuming print jobs, many modern printers have a pictbridge port for direct photo printing straight from the camera.

Input Tray

Like most inkjet printers, this one has a single vertical paper input at the rear, which can hold up to 150 sheets of plain paper. Some of the latest models have dual paper trays, enabling you to load plain paper into one tray and a reserve amount into the other tray for specialist photo paper. Handy, as it stops you needing to swap it around.

Ink cartridges

Stored in a transversing carriage beneath this flap are the all-important ink cartridges. HP and Lexmark cartridges tend to have built-in heads, while Canon and Epson printers have separate heads and replaceable ink.



PCFormat FAVOURITES... Printers and scanners

Why go to an expensive photo developer when you can do it all at home?

>> Photo Printers



TOP SPEC

Canon i9950 £400 >> PCF178 93%
The daddy of all photo printers, the i9950 stinks of quality. Awesome image quality, reasonable ink costs and it even has a Pictbridge port.
Canon >> www.canon.com

WE ALSO LIKE

Canon Pixma iP8500D £289 >> PCF178 88%
Epson Stylus R1800 £345 >> PCF178 86%



BEST BUY

Canon iP6000D £125 >> PCF178 95%
This budget model in the Canon Pixma range offers tremendous value for money. With quality this high and running costs this low, it's a winner.
Canon >> www.canon.com

WE ALSO LIKE

HP Photosmart 8450 £175 >> PCF178 78%
Epson Photosmart 8150 £129 >> PCF178 75%

>> All in ones



TOP SPEC

HP PSC 2355 £139
One of the single fastest printers in the all-in-one category, the PSC 2355 from Hewlett Packard is speedy, and offers excellent scan and print quality.
HP >> www.hp.com

WE ALSO LIKE

Epson stylus CX6600 £125
Canon Pixma MP130 £99



BEST BUY

HP PSC 1510 £79
Superb print quality and speed for such a low price-point. They come cheaper, but you'll start compromising on quality and effectiveness if you do.
www.hp.com

WE ALSO LIKE

Lexmark P4350 £99

>> Scanners



TOP SPEC

Epson 3170 £125 >> PCF176 95%
A beast of a machine, the 3170 does everything to justify its price-tag, with amazing colour-rendition, consistent quality and plenty of options.
Epson >> www.epson.co.uk

WE ALSO LIKE

Canon Lide 500F £127 >> PCF176 80%
HP Scanjet 4670 £123 >> PCF176 70%



BEST BUY

Epson 2480 £75 >> PCF176 92%
Dominating both the high and low ends of the scanner market, Epson clearly know their stuff. For the money, you can't buy better than the 2480.
Epson >> www.epson.co.uk

WE ALSO LIKE

Canon Canoscan 4200F £85 >> PCF176 85%
HP Scanjet 4070 £86 >> PCF176 76%

Broadband

Searching for a new high-bandwidth connection?
Simply looking to upgrade? The best deals are right here

Choosing an ISP is like negotiating a minefield. Seriously, there are so many service providers and packages these days. It's important to look at several things – cost for the service being paramount, but also whether the service has a

download cap or peak-time throttle. Neither are good if you're spending all day MMO'ing. Worth noting: Eclipse broadband are offering a £30 reward for persuading your mates to switch from their old broadband provider. See www.eclipsebroadband.com

Jargon Buster

Baffled by science?
Let us explain the unexplainable...

ADSL

A type of broadband connection in which the download speeds are faster than the upload speeds, hence the acronym for Asymmetric Digital Subscriber Line. Currently, it's the only DSL available for most home users in the UK and it uses standard BT phone lines.

Bandwidth

The amount of data that can be transmitted and received by your connection at the same time. Bandwidth is usually measured in bits-per-second (bps).

Cable

A broadband type that connects via a fibre optic network (such as NTL). It lets you access premium TV through the same cable.

Contention Ratio

You share your bandwidth with other people; up to 49 users if you are on a cable modem. The higher your contention ratio (in this case 49:1), the chuggier the connection.

Download cap

All broadband packages used to be unlimited. Now many providers restrict the amount of data you can download per month. Caps are expressed in GB and if you exceed them, you may have to pay extra.

LLU

Local loop unbundling. Many Telecoms companies and ISPs access the former incumbent's local network (ie BT) to provide services directly to the customer.

ADSL2+

A connection type that is quicker, the closer you live to the network exchange. Expect speeds up to 24 Mbps if you're lucky enough to live near the exchange, but do check local availability.

PCFormat FAVOURITES... Who you gonna call?

Choose the ISP that best suits your net-needs

>> Light

The best broadband options for budget-conscious emailing and fast web-browsing

Simply Broadband Max

SPEED 512Kb
MONTHLY COST £15.95
CAP 10GB
FIRST YEAR COST £191
MIN CONTRACT 1 month
Simply >> www.simply.com

Tiscali 1MB Broadband

SPEED 1Mb
MONTHLY COST £14.99
CAP 2GB
FIRST YEAR COST £179.88
MIN CONTRACT 12 months
Tiscali >> www.tiscali.co.uk

Virgin Net

SPEED 512Kb
MONTHLY COST £14.99
CAP 3GB
FIRST YEAR COST £179.88
MIN CONTRACT 1 month
Virgin >> www.virgin.net

Home LITE

SPEED 512Kb
MONTHLY COST £11.95
CAP 1GB
FIRST YEAR COST £190.40
MIN CONTRACT 1 month
NewNet >> www.newnet.co.uk

ntl 1MB Broadband

SPEED 1Mb
MONTHLY COST £17.99
CAP 3GB
FIRST YEAR COST £215.88
MIN CONTRACT 12 months
NTL >> www.ntl.com

>> Medium

The perfect choice for those who surf for three hours a day and play games online

PlusNet Broadband Premier

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MONTHLY COST £21.99
CAP Uncapped
FIRST YEAR COST £263.88
MIN CONTRACT 1 month
PlusNet >> www.plus.net

Supanet

SPEED 2Mb
MONTHLY COST £17.99
CAP 10GB
FIRST YEAR COST £215.88
MIN CONTRACT 12 months
Supanet >> www.supanet.com

IC24 Broadband

SPEED 2Mb
MONTHLY COST £16.99
CAP 5GB
FIRST YEAR COST £182.88
MIN CONTRACT 12 months
IC24 >> www.ic24.net

Tiscali 2MB Broadband

SPEED 2Mb
MONTHLY COST £17.99
CAP Uncapped but throttled
FIRST YEAR COST £215.88
MIN CONTRACT 12 months
Tiscali >> www.tiscali.co.uk

Unlimited Broadband

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CAP Uncapped
FIRST YEAR COST £358.63
MIN CONTRACT 12 months
ADSL 4less >> www.adsl4less.com

>> Heavy

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CAP Uncapped
FIRST YEAR COST £312
MIN CONTRACT 3 months
Be >> www.bethere.co.uk

Bulldog Inter@ctive

SPEED 8Mb
MONTHLY COST £29.50
CAP Uncapped
FIRST YEAR COST £295
MIN CONTRACT 1 month
Bulldog >> www.bulldogbroadband.com

Telewest Broadband

SPEED 10Mb
MONTHLY COST £35
CAP Uncapped
FIRST YEAR COST £420 (free install and modem until end of Jan 2006, £50 setup otherwise)
MIN CONTRACT 12 months
Telewest >> www.telewest.co.uk

Broadband UK Online

SPEED 8-22MB
MONTHLY COST £29.99
CAP Uncapped
FIRST YEAR COST £439.87
MIN CONTRACT 12 months
UK Online >> www.ukonline.net

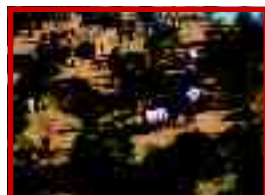
ADVICE!

Thinking of going wireless? Then make sure you invest in a setup (router and wireless card/USB receiver) that support the 802.11g standard at the very least.

How to buy...

Games

January sales have swung around again, but just because it's cheap, doesn't mean it's good. Here's our advice...



Age of Empires 3

The most beautiful RTS around, but lacks the realistic battles of Dawn of War or Rome: Total War. One for a hardcore fan.

The Movies

A novel approach to the Sims-style game, allowing you to build up your movie empire from scratch. You manage the egos of your stars and can film your blockbuster shot by shot.



Star Wars: Battlefront 2

It's difficult not to get excited about flying an X-Wing or being a Jedi, but it all loses its shine rapidly.

UK Games sales

LEISURE SOFTWARE CHARTS COMPILED BY CHART TRACK © ELSPA UK LTD - WWW.ELSPA.COM

POSITION	MOVED	GAME TITLE	PRICE	MONTHS IN CHART	ISSUE
1	New Entry	Age of Empires 3	£35	N/A	PCF 182 78%
2		Football Manager 2006	£35	1	PCF 181 90%
3	New Entry	Call of Duty 2	£45	N/A	PCF 182 88%
4	New Entry	Civilization IV	£35	N/A	PCF 181 92%
5	New Entry	The Movies	£45	N/A	PCF 182 89%
6		The Sims 2: Nightlife	£20	2	PCF 180 80%
7		The Sims 2	£40	15	PCF 166 92%
8	New Entry	Harry Potter and The Goblet of Fire	£30	N/A	PCF 183 57%
9		Quake IV	£45	1	PCF 167 88%
10	New Entry	Star Wars: Battlefront 2	£40	N/A	PCF 183 68%

HAVE YOU PLAYED?

If you didn't catch these gems you're missing out.

City of Villains £30 + £8/month

The successor to City of Heroes builds on the original with the experience the developers have gleaned since its release. You're also able to design your own evil lair and it still has the best character design of any MMOG.

PCF 182 88%
www.cityofvillains.com

Rome Total War: Barbarian Invasion £30

Total War isn't just a clever name, this top RTS has everything a warlord would need. From settlement management to mercenary recruitment, you'd have tons to do even if it wasn't for the huge battles.

PCF 180 88%
www.totalwar.com

Fable: The Lost Chapters £30

This fantasy romp wowed Xbox owners a year ago and has hit the PC market running. It's a morality tale with your avatar choosing which path to take: darkness or light. Outside the missions, you can steal, kill or buy almost anything you find.

PCF 180 85%
www.microsoft.com/games

RE-RELEASES THIS MONTH

Old games given a well-deserved new lease of life



Hulk

Sold-Out >> £4.99

If, when you were a kid, someone offered you the chance to become the Incredible Hulk for a fiver you'd have bitten their hand off. Now all your big, green menace fantasies can come true.



Empire Earth

Sold-Out >> £4.99

This excellent RTS spans time as well as continents, giving you the chance to control units from feudal knights to goose-stepping soldiers. For this price, you can forgive the chunky visuals.



TOCA Race Driver

Sold-Out >> £4.99

With the third instalment coming your way in February it's a good time to remind yourself where it began. The original sees you working your way from humble beginnings to king of the circuit.



Pool Paradise

Sold-Out >> £4.99

With ten different tables and eleven variations on the game you're not just getting a plain pool sim. Jimmy White provided consultancy on it, so don't expect to win that many tournaments.

The Mod Squad

Extras for your favourite games



The Ship

Game Half-Life

Web www.theshiponline.com

With the millions of *Half-Life 1* mods out there it's easy to miss some real bobby dazzlers, *The Ship* is one such mod. The eponymous 1920's cruise-liner is packed to the gills with AI tourists, one of which is your human quarry. Almost like *Cluedo* in reverse, finding the target requires you to chat with various AI to find out their name. Once you've met your hapless victim, it's not just a case of pulling out a gun and shooting them dead in the ballroom, you've got to carry out your crime undetected or you fail your mission. The unique stealth approach and stylised graphical work sets this apart from the mass of identikit *Half-Life* mods around. Definitely worth a good look.



Star Wars: Warlords

Game Homeworld 2

Web warlords.swrebellion.com/

If you can't wait to get your sweaty mits on the forthcoming *Star Wars* RTS, *Empire at War* then look no further than this not-so-little beauty of a mod. Downloading *Star Wars: Warlords* gives you access to over 100 ships taken straight out of both *Star Wars* eras, most based on technical specs from years of daylight-shunning bedroom-dwelling sci-fi geekery. You get to control all the ships from the little Tie-Fighters right up to the huge capital ships like the Super Star Destroyers. You're not just limited to the traditional Rebel Alliance or Galactic Empire either; they've also added a couple of extra playable races in the weird Yuuzhan Vong and the pirates of the Militia.

HONORABLE MENTION



Dystopia

Dystopia transposes the action from the original maps into a vision of cyberpunk hell. It's designed for massive battles between the forces of the Punks and Mercenaries. The most intriguing feature is that not all the action takes place in our corporeal realm; you can hack into the virtual world to attack the corporate networks. The only problem is you need a lot of players or you'll find yourself in a very quiet *Dystopia*.

Game Half-Life 2

Web www.dystopia-game.com



Beta Eater

Win an exclusive chance to test the best upcoming MMOs today

Greetings once again Eaters, you're proving to be a most voracious crowd. No sooner have we announced our secured reader beta places than you lot gobble them up. All is as it should be. So, we'd best skip the starters and get right on to



with the subject "**Ooo me Chronicles**".

Next up, we've managed to extend the **Auto Assault** beta offer from friendly NCSoft, so if thrashing it down some post-apocalyptic highway, chainguns blaring does it for you, there's still time. Same email, with the



the tasty MMO main course eh?

As you may have seen on page 28 **The Chronicles of Spellborn** has come out of leftfield to promise some interesting gaming. We've got 50 places secured, just email betateater@futurenet.co.uk



subject line as "**Auto Assault**" please.

Tactica Online is accepting applications at www.tacticaonline.com/beta so if you've not yet had your fill of fantasy-themed MMOs, head over there now.



PCF'S SELECTION Games

Form is temporary, but class is permanent – the games we're *still* hooked on

>> Sports Games



MUST-PLAY

Pro Evolution Soccer 5 £40 >> PCF 181 88%

The king of football games just got better. The latest incarnation is tricky to master, but is the closest thing to real football that you're ever going to get outside of strapping on some boots and getting muddy in a field with a pig's bladder.

Konami >> www.konami-pes5.com



UNSUNG HERO

Cricket 2005 £30 >> PCF 178 72%

On release it was roundly condemned by the gaming community for being too hard. It was difficult to get into double figures let alone smash centuries, but a little perseverance and patience makes this the best cricket game you'll find.

EA >> easports.co.uk/products.view.asp?id=6728

>> Massively Multiplayer Online Games

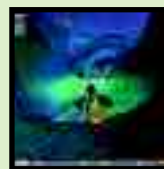


MUST-PLAY

World Of Warcraft £26 >> PCF 170 92%

Still the best MMOG out there and responsible for many a lost midnight hour. The simple interface and huge online world make this an absolute must for anyone who's ever wanted to get battle demons and quest away to their heart's content.

Blizzard >> www.worldofwarcraft.com



UNSUNG HERO

Flyff £FREE >> PCF N/A

Flyff is the first ever flying MMOG and has just been put out as an open beta test. All the usual monster fighting, questing and interaction is there but once you're powerful enough you can jump on a hoverboard type thing and fly off to different lands.

Gala-Net >> english.flyff.com



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Restart

THE PCS OF YESTERYEAR

Neverwinter Nights

REDISCOVER Vast tundras to explore in glorious 3D

Frustrated by your current MMO of choice? Tired of partying with the same people, touring the same old instances for the same predictable drops? Then why not revisit *Neverwinter*, where there are a billion player-created worlds just waiting to surprise you.

It's actually a bit misleading to say that *NWN* needs to be rediscovered, there's still an incredibly active and productive community behind the game, grinding out campaigns at an astonishing rate. If you're totally new to the game you could probably play solidly

for the next five years and still have new material spare. *D&D Online* may be grabbing the headlines in the news, but for our money there's still no greater digital realisation of the pen and paper roleplaying classic. We'll admit that it looks like a gaudy polygon-fest from the outside, but you can't fault the elegant, intuitive interface, nor the depth, scope and potential of the action. Give it a try. There are persistent server worlds out there just waiting for you to drop in, without any kind of monthly subscription. You can pick the game up for a tenner now too, so what've you got to lose.



Neverwinter Nights may look a bit of a mess by today's standards, but it's a joy to play.

FALSE PROPHETS

"THEY HAVE AGREED, AS THEY BUILD THEIR NETWORK, TO CONNECT EVERY SCHOOL, EVERY COLLEGE, EVERY HOSPITAL AND EVERY LIBRARY IN BRITAIN. FOR FREE." TONY BLAIR TALKING IN PCFS1 ABOUT A DEAL MADE WITH BT, SHOULD THERE BE A LABOUR GOVERNMENT. BWAHAHAH!

Star Wars Battle of Yavin

This remakes the original wireframe arcade classic from Vector Grafix. It pits you against a horde of TIE Fighters and the Death Star. The game's free to download from the author's website and is a great shooter. There are hundreds of models on screen, with Star Destroyers and X and Y-Wings battling it out. You even get to attack the trench and plug an exhaust port that's no bigger than a womp-rat.



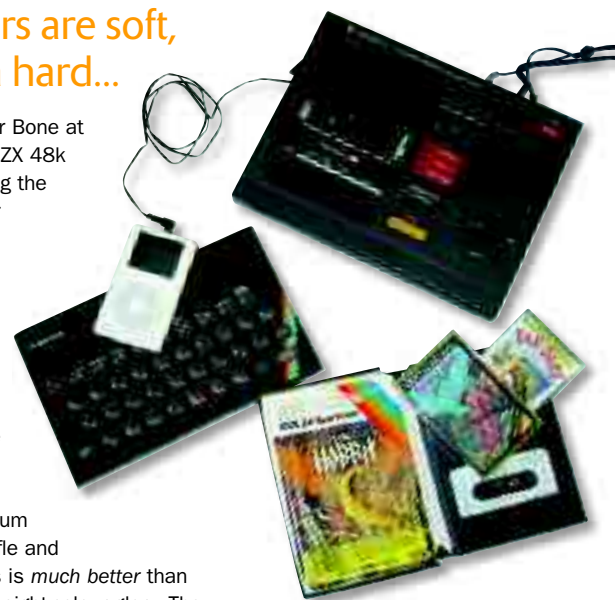
Star Wars: The Battle of Yavin
www.bruneras.com

Sinclair iPod

Why not randomise your eight-colour gaming with an iPod?

REINVENT Emulators are soft, we like our nostalgia hard...

Spurred on by the work of Peter Bone at sbeam.dk we fished out an old ZX 48k Spectrum from the loft and bring the old gal bang up to date. Take an in-car cassette adaptor, an iPod and your ancient tape-loading Speccy. Using an app called *winTZX* (on the coverdisc) convert your old game tapes (there are old TZX files from tapes around on the web but you're on dodgy legal ground there...) to .wav files. Dump the .wavs on your iPod, plug the pod into the tape adaptor and slot it into your tape drive. Bingo, a modern jukebox of all your old favourite Spectrum games! Why not bung them on a Shuffle and have a random Game of the Day? This is *much better* than using a Speccy emulator to relive that eight-colour glory. The setup process is 90% error free and more stable than running the .wavs out of your soundcard, but anyone who actually remembers tape drives will know the loading time was always a nail-biter anyway. Fear the "R Tape Loading Error..."



"BEFORE WE MADE WORLD OF WARCRAFT, I RAN AN UBER-GUILD. I PLAYED DARK AGE. I PLAYED CITY OF HEROES - WHICH IS A REALLY INTERESTING TAKE ON THE MMO"

Rob Pardo, Lead Designer, World of Warcraft. See p158



REMEMBER...

Responsible for more bleary eyes and pale complexions than heroin chic, *Civilization 4* owes its success to the original's solid design.

As everyone settles down to another few months of all night *Civilization* stints with Meier's latest masterwork, let us whisk you back to the halcyon days of 1992 to have a look at the PC's first taste of *Civ*. It may be jarring to see the original top-down perspective in all its green and blue-squared glory, but at the time this was easily one of the most intuitive and manageable strategy games available. More importantly, *Civilization* had a vast amount of the series' underlying structure present from the outset, and the simple but enthralling balance of scientific discovery and military manoeuvring appealed to the tiny despotic overlord that resides in all of us. Long-time fans of the game will regale you with tales of hours spent working their way around the world map, either crushing the weak and manipulating the powerful or, alternatively, carefully negotiating with countries they thought to be anti-war, only for the 'pacifists' to become an extortionate monsters once they discover nuclear weaponry. PCFormat's opinion at the time? "Dangerously addictive."

ALSO OUT THEN...



EYE OF THE BEHOLDER 2

This *Dungeon Master* clone RPG sequel enjoyed a degree of success thanks to an atmospheric graphical style and terrifying monsters. From a bygone era when evil interior designers favoured minimally decorated tunnels and dungeons for their clients' lairs.

SCORE
PCF 89%



POLICE QUEST 3

With a mix of digitised photos and hand-drawn graphics, Sierra's collarfest brought the tough life of a police officer to life. Unfortunately, it also included the dull procedural aspects of police work, where any 'renegade' arrest tactics saw you heavily chastised. Boo!

SCORE
PCF 78%



BATTLE COMMAND

A polygonal tank game that introduced the fantastic concept of parachuting your advanced (and very heavily armed) vehicle out of the back of a helicopter. With subtly named weaponry such as the Pulverizer, this one really couldn't fail to impress us.

SCORE
PCF 86%

Looking Back

THE CREATOR'S CRITIQUE



Fact File Warcraft wizard

Subject Paul Sams
Job title Senior VP of business development
Developer Blizzard
Reviewed PCF170, 92%



Adam and Mrs Adam (really) face off against the undead.



You scored 10 in general knowledge – now your specialist subject: Gold Seams Near Ironforge.

World of Warcraft

Kieron Gillen finds out about the pain Blizzard went through creating the world we love

Games are made by people. The plural's important. It's rare that we come across solitary hermit-programmers, crafting a world in their bedrooms. We're talking about teams of intelligent professionals, striving over years to achieve something. This column doesn't always get to that, generally talking to one sample representative of that larger body. However, with PCFormat at Blizzcon – Blizzard's

first convention devoted to its games in Anaheim, California – we had a chance to change that. With virtually all the team there, we were able to talk to people from all across the Blizzard hierarchy about the struggle to create one of the biggest games imaginable.

CREATING A MONSTER

In fact, it was bigger than even they imagined. Was it a hard decision to do a massively multiplayer game? "At the time, it was a very easy decision. Because it was the first product in that genre, we didn't really have enough information to make that decision," Frank Pearce, senior vice-president of Product Development relates "I'm happy that we did, and I'm happy that we are where we are today... but I think the discussion would be much more drawn out if we knew then what we knew today. That we'd have to plan for 4.5 million subscribers. That we'd known how much the hardware and software infrastructure would cost. If we'd taken a step back and thought 'Does this change our business? Does it change it dramatically?' It does. Overnight, we went from selling boxes to a service business."

"It was the single most difficult thing we'd ever done as a company, by far," describes Paul Sams, senior VP of business development, "From

my perspective, I was scared on many occasions that we'd bitten off too much and we'd tried to do something too big. We'd built a game that I think had some of the most content delivered at the beginning of a launch. From the user perspective, making it simple to get into, while balancing eight different races and trying to build the key puzzle pieces was our priority. Our game easy to learn and hard to master. To make it accessible, so you don't have to get out a manual to try and learn how to play. To do all these things... on such a huge stage, in an area where we had no idea whether it would be more than a niche... We believed if we applied our game design philosophies that we'd pull it off. Some believed it more than others. On the leadership team, I was probably the biggest sceptic... which is where my business hat was. The business guy was the nervous one... but I'm glad we did it".

Blizzard has created an enviable reputation as a badge of quality, with a recent survey showing that the brand was that most likely to make a consumer buy a game without any prior knowledge of it. One of the tools Blizzard uses to maintain this effect is quickly culling releases that don't measure up. Take the ill-fated *Warcraft Adventures* from the Nineties. "A lot of us were fans of *Monkey Island*... and we'd really like to do something like that," Paul reveals, "but the game was not the way we wanted it, and it was millions – let's just say multiple millions – we wrote off, because it wasn't working." Which leads to the question – was there a time they considered actually killing off *World of Warcraft* because it was all too much?

"We never had a moment when we thought about doing that," Paul answers after a moment's thought, "There were a lot of moments that were very trying and very difficult. We all believed it at different levels at differing times in the process. Sometimes you felt this was going to be the



It's like start of *Bambi*, all over again. Sniff.



I'm here to sell these *fine* leather jackets.

biggest thing ever... and sometimes you thought 'oh... are we going to even be able to break even?' You go through all these emotions, and in the deepest, darkest moments you're scared... but we have a lot of confidence in our teams and our development and our business folks, and all the different people who are involved. At the end of the day, whenever we had those moments – which we all do, I guess, in our lives – we found some way to push together."

Even thinking about the challenge required skills that simply didn't exist in the company before that. For example, the persistent world nature of the game itself. "It's a client/server architecture and we haven't done a client/server architecture before," Frank elaborates, "We actually hired someone – John Cash, a real smart guy who had a lot of experience – to help us out with that. We realised that was something we didn't have sufficient expertise in, so we went out and found someone who could help us."

LAUNCH ISSUES

Once the game was released, though, the real battle began. MMOs aren't something which one can sit back on, and it doesn't always play out as expected. Current Lead Designer Tom Chilton talked about how Paladins – at high level – were envisioned as being a front-line troop, but players displayed a tendency to hang back. What to do in a situation? Either accept, or move on? "What

we're going to have to do in this case is to adopt the existing gameplay, and provide alternatives so people can play it more in the way we envision," Tom explains, "Also, since the game's been live for a year, it's very important not to make really drastic changes in how the character classes play overnight. What we're going to do is enable Paladins to play the same way they do now, or use the Talent systems so they're more of an in-your-face kind of Paladin".

But the biggest problem which WoW faced was its success. "We planned for something – but we obviously didn't plan for enough," Frank explains with a rueful grin. "Supporting 4.5 million subscribers worldwide is our biggest

challenge right now," he continues, "When we launched WoW in North America, we had capacity that was projected for the first year and we exceeded that in the first two months. It was similar in Europe Asia. The response to WoW is well beyond anything we could have imagined." And it's times like that you'll be glad you hired a client/server architecture specialist. "There's a lot of pressure," Frank Pearce laughs, "especially with a subscription-based model, to make sure we're adequately supporting our customer base. There was certainly a huge sense of urgency in terms of what we were doing." Years in development and still there's urgency. When it comes to MMOs, resting on your laurels is never a viable option. **PCF**

"The biggest problem that World of Warcraft faced was its success"

A question of style

Why all the big heads and robotic ostriches?

Much like Roxette, *World of Warcraft* has the look. Rather than realism, Blizzard took a different angle. "We were just fans of exciting, compelling new stylised art," Justin Thavirat, Director of Project Art describes, "Warcraft II already had that going for it, and we soon realised it was the

direction we wanted to take WoW in. It's got the big shapes, the big silhouettes... but what we pay real attention to is the lighting and the atmosphere. We want to make it as immersive as possible, and the exciting visuals complement that." Not that it was the only style they considered. "We experimented

with a lot of visual styles," he says, "Some that were maybe a little more realistic or dark or moody... but we soon realised that *Warcraft* has a distinctive look we wanted to do. Luckily it helped set us apart from a crop of games that tried to attain realism. I'm glad we went in a different way."

Developer Diary

New game frontiers call for pioneering programmers, says Owain Bennallack



The biggest TVs are the size of freezers and flatscreen monitors can double as room dividers, but Philips has made the gaming stage even larger: it wants to take over your home entirely.

amBX may sound like a flu vaccine, but Philips' invention has the potential to turn a living room or a PC den into a games arena.

Essentially a system for enabling amBX-enabled to communicate with and be controlled by a PC, console, or other electronic device, amBX promises to give developers control of the light levels in a room, the colour of that light, to incorporate surround sound from any number of devices, and to coordinate force feedback from the furniture. It might even incorporate fans (great for flight sims!) or change the humidity as you plunge into the jungle in *Boiling Point*.

Since man invented the wheel, innovation has accelerated. Games have changed beyond recognition in the past 20 years, and amBX hints at how far they could go. Philips envisages a future where the room's temperature, wall coverings, and even the flooring could adapt on demand. "Immersive gaming" sounds like an understatement.

On the other side of the equation, input, the ground is also shifting. From the Nintendo Revolution's motion-sensitive controller and the DS' touchpad, to Sony's pioneering EyeToy and SingStar – not to mention the camera technologies the company has in the labs – the way we interact with games is evolving too. PC gamers shouldn't dismiss the Revolution as something for kids: one senior developer I spoke with recently said it felt like the most responsive first-person controller he'd ever used.

Usually the PC has led innovation, of course – from network gaming and CD-ROMs, to webcams and force feedback. But regardless of the platform, such 'disruption' to the status quo opens up cracks through which debutantes in the industry might squeeze.

Exploiting the potential of hardware innovation is something that many devs will also be trying to do, and it's no easier because you're fresh to the scene. But just as MMOG and CD-ROM debuts enabled start-ups to carve a role for themselves, so will the innovations of tomorrow.

Owain is the Editor of *Develop* magazine.

Next month in **PC**Format

Beyond the digital dream

Get your hands dirty with ten pages of projects to push your home to the limit

- >> Giant touch screens
- >> Massive range wireless
- >> Web cam security
- >> Build a PC into a desk
- >> Transform your house

Hack your home

Plus! Commandos: Strike Force, dual-core laptops, Intel ViiV, Athlon FX 60, how to get hosted and more...

ON SALE 26-01-2006

Overtoyou...

HAVE YOUR SAY

Upgrade nightmares

Taking apart your PC can open the door to what we call 'upgrade error': that moment when you realise you may have just bent an important diode. Still, it's always worth it in the long run, which is why we carry on doing it...

Only **17** respondents to this month's survey had never tried to upgrade their PC at all. They must have mistaken us for a lesser mag. Bad luck to the reader who accidentally shorted a brand new motherboard on his case's gold screw holes, though. D'oh...

Over 1 in 10 of you hardly ever suffer a serious PC crash, although 68% of readers suffer a complete system freeze or restart at least twice a month. Just three people per 100, though, are unlucky enough to suffer crashes on a daily basis. Phew.

Upgrading is a particular problem though. Of the whopping **94%** of people who've tinkered inside their case, **2/3** had problems with the new piece of kit. Not all were the manufacturer's fault though... "Eight years ago I first opened my PC case and had a look inside – I did turn everything off, of course. There was a square thing on one side with a little bar running down its side – that'll be the CPU, I thought. I wonder what the other side looks like? So I prised the bar up and lifted the processor.

I put the chip back in and turned the power on at the wall. I then turned the PC on and was rewarded with smoke and a burning smell from the the PC. I quickly disconnected, opened the PC up and put the CPU in the right way round."

To avoid upgrade disasters such as this, why not subscribe to PCF on p152?

You're very tech savvy though – you fix problems the right way by reseating cards, installing new drivers and visiting our forums. **1/4** of readers, though, have tried an alternative OS such as Linux in their search for stability. No prizes for the reader who claimed "I took my PC in the bath with me, covered it in bubbles and it was fine," though. It's not big, and it's not clever.

Still, you've had your fair share of dodgy kit and unworkable drivers. Nearly 60% of readers have had to return kit after purchase because it didn't work.

And when it got there? Over **1 in 3** people were happy with the customer service. Indeed, no-one took the opportunity to complain about a specific company, and many individuals (Joachim from Alienware, are you reading?) were singled out for glowing praise! "A www.morgancomputers.co.uk product was damaged in transit, was replaced by alternative couriers before damaged goods actually returned. Excellent service."

Despite all these hardware problems only **11%** of you had written to our Luis at any stage. And of those who had, he helped them all... well, nearly. "He was a little sarcastic. I was only 14 at the time, so it stung my fragile geek ego quite a bit, but it made me the man I am today." Aww bless...

WIN!

Give us a piece of your mind... Sign up to our newsletter at www.pcformat.co.uk and you'll receive our survey. Bung us your answers for a chance to win a top-of-the-range Shuttle XPC SN25P

barebones system. It supports Athlon 64, HyperTransport, and PCI Express.



NEXT MONTH
PCFormat issue 184 is on sale 26th January